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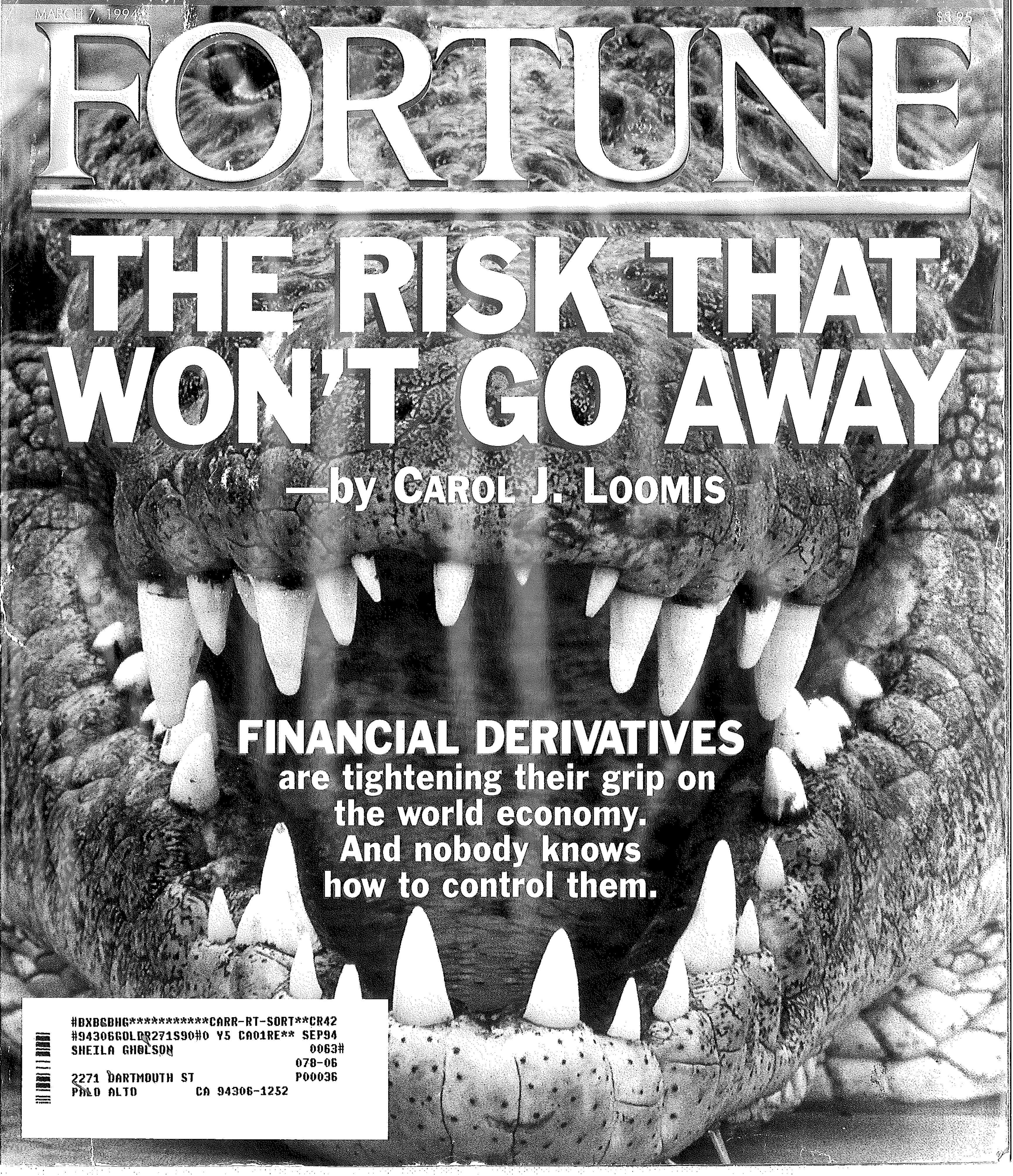
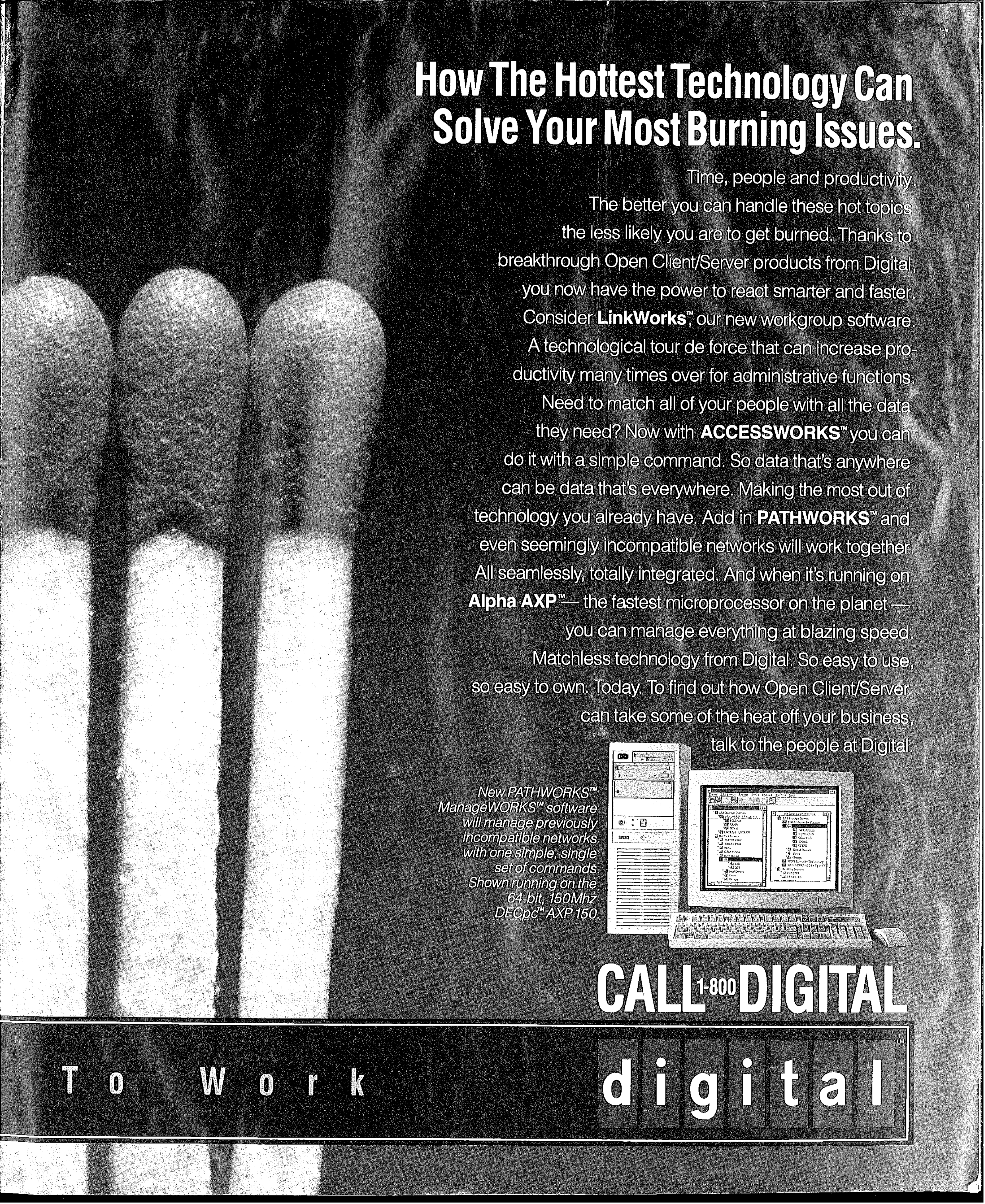


THE RISK THAT WON'T GO AWAY

—by CAROL J. LOOMIS

FINANCIAL DERIVATIVES

are tightening their grip on the world economy. And nobody knows how to control them.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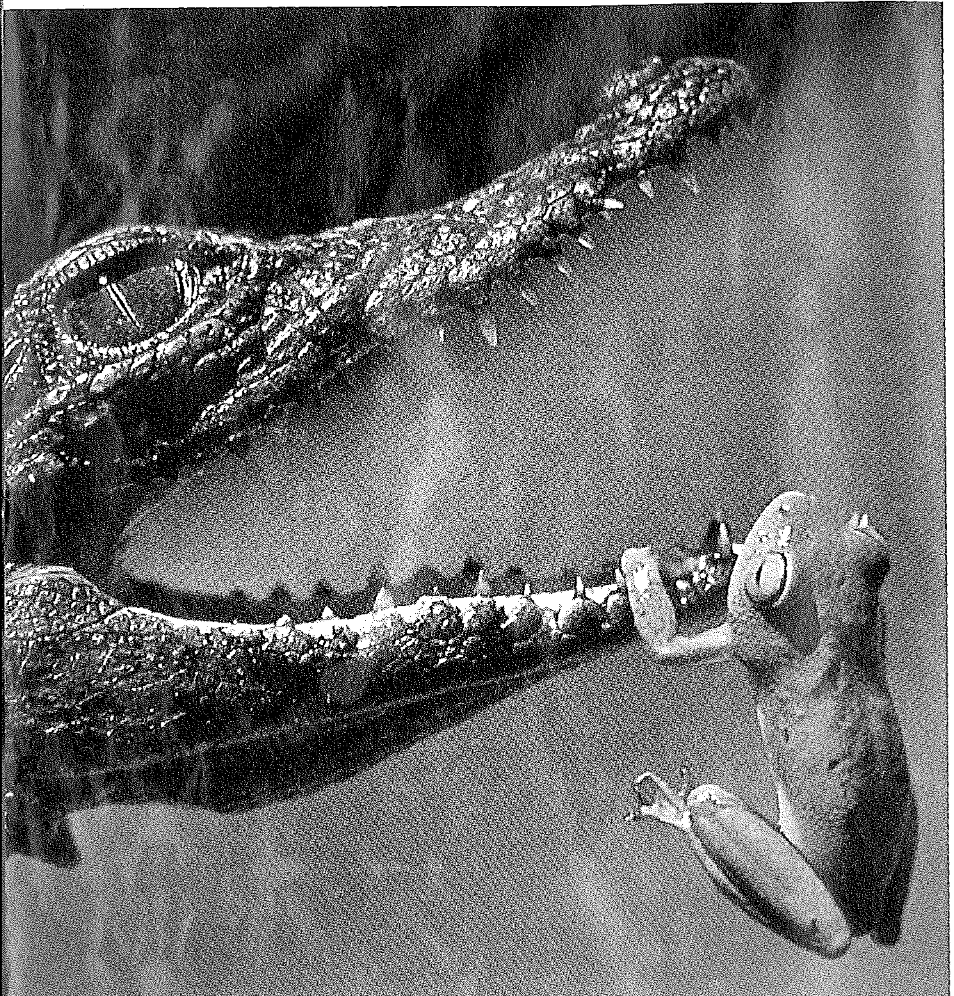
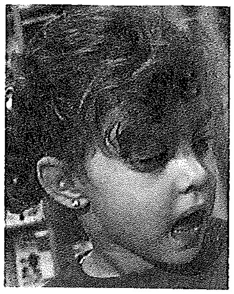
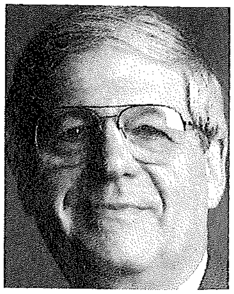


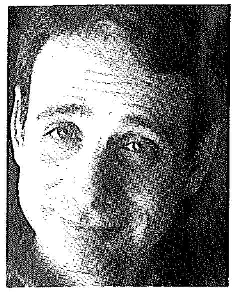
ABOVE: Financial derivatives have the potential to pose as serious a threat as this young predator, photographed by Jonathan Blair (Woodfin Camp).



"Shopping is a form of entertainment." 60

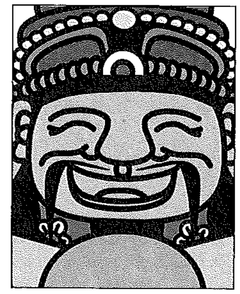


"We have a much better view of our own mortality, and that is a great reliever of arrogance." 74

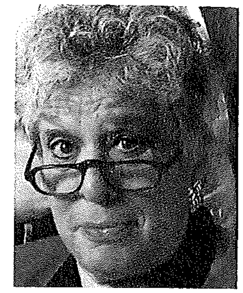


"It's as if every business woke up and saw this great universe out there. They all want in, even if they don't know what it means." 86

"The need to export is a burden a country must bear because its import suppliers are crass enough to demand payment." 109



"Chinese consume 711 kilowatts of power per capita, vs. 11,333 in the U.S. The potential is enormous." 116



"They kept telling me, 'Come on, you're a woman—you don't know how to run this thing.' I didn't need to deal with that." 138

COVER: The layers of international connections underlying derivatives give them the potential for roiling the waters—like this Nile crocodile in Botswana. Photograph by Frans Lanting (Minden Pictures).

FORTUNE

EDITOR'S DESK

FAIR WARNING OF A FINANCIAL RISK


JOHN ABBOTT
Storied writer Carol Loomis: untying the knots

SOMETIMES you have an unsettling feeling that the ground is shifting under your feet—that fundamental changes are taking place that will affect you profoundly but are as yet formless, invisible rumblings. The vast swelling of the so-called financial derivatives market to trillions of dollars has given investor after investor, not to mention lawmakers and corporate executives, a touch of that shiver. Some fear that this may be more than just a benign shifting of tectonic plates, but perhaps a precursor of the financial equivalent of the Big One.

Our cover story, "The Risk That Won't Go Away," is a classic example of a FORTUNE strength: focusing in on such a basic change in great depth and figuring out what it portends. What we've found won't totally reassure you. Not only is the derivatives market risky, but it is also risky in a new way because of its global interconnectedness, with each domino placed close to the next in chains that reach round the world. As investors and regulators come to grips with this new market, our cover story's author, Carol J. Loomis, gives them some hard answers to the questions of how chancy, why, and where.

FORTUNE is indeed an enterprise whose assets go down in the elevator every night—but we should have a special elevator bank for Loomis, a business journalist beyond compare. Decorated with every major honor our profession offers, including the 1993 Gerald Loeb Award for Lifetime Achievement, she wrote her story while marking her 40th anniversary on our staff. A researcher and deputy chief of research before being promoted to the writing ranks, she has written many groundbreaking stories—from reports on the troubles of Wall Street in the 1960s, ITT and the two-tier stock market in the 1970s, to Fireman's Fund and Third World debt in the 1980s, and Robert Campeau and IBM in the 1990s. But, says Loomis, "this is the most complex subject I've ever had to write about."

For three months, she puzzled over every knot in the derivatives tangle, reading even more than the usual mountain of studies that she customarily devours when reporting. As always, her knowledge goes much deeper than what appears on the page: A note in the margin of her draft assures story editor Julie Connelly that she stands ready, if necessary, to explain "the limitations of delta hedging and the terrible plight of being in negative gamma." A quip, yes, but we all know she could have done it.

Marshall Loeb
MANAGING EDITOR

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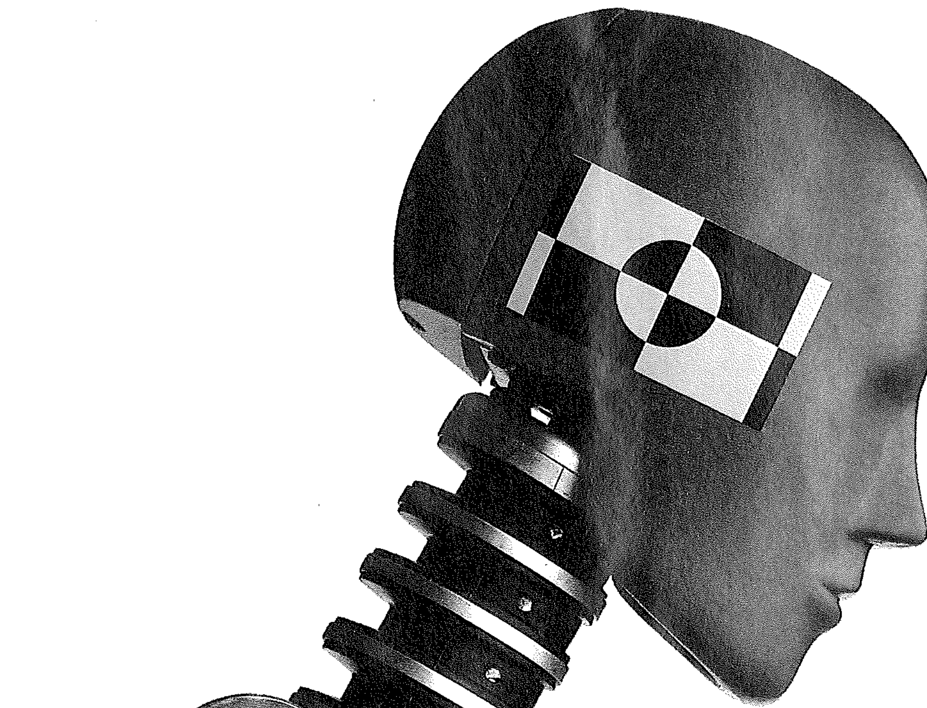
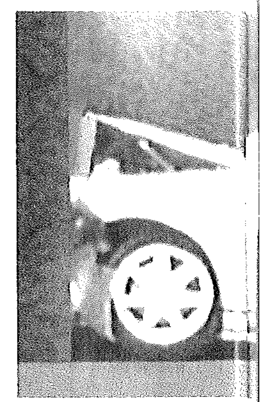
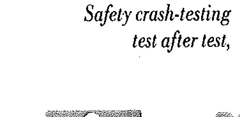
Sensitive, Slouching, (How Much More Lifelike

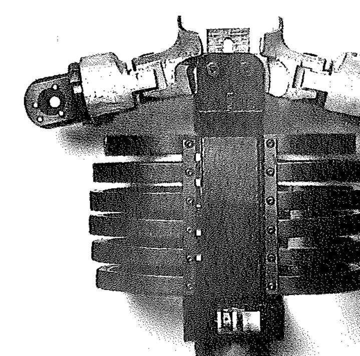




Safety crash-testing
test after test,

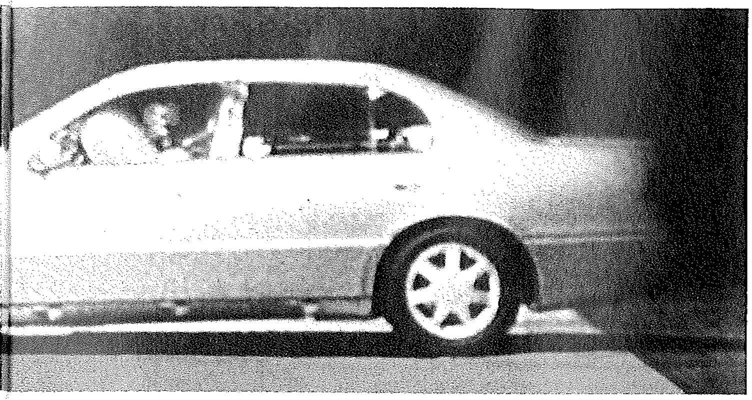


Our dummies are able
the head, torso and

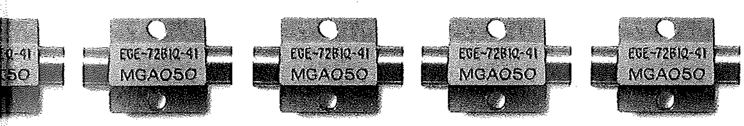


As you can see, this guy's spine is curved to mimic the driver's slouch. His neck is designed to illustrate more human-like fore-and-aft movement. And his torso even has ribs.

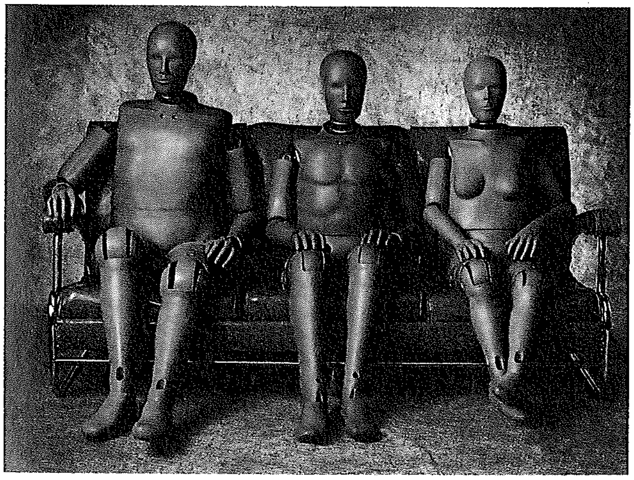
Bald.
Can They Get?)



of Lexus automobiles reinforces the critical importance of the three-point seat belt. In
our dummies all reach the same conclusion: You should wear it at all times.



to feel with sensors and accelerometers. We place these devices throughout the body–in
legs of the dummy–to monitor the force of impact these areas receive in a crash.



We crash-test dummies of many different shapes and sizes, since
the people who drive Lexus automobiles come in all different shapes and sizes.
When it comes to safety, one size does not fit all.

In the realm of safety crash-testing, man is not the measure of all things. Dummies are. So it follows quite logically, the better the dummy, the better the car.

At Lexus, we employ what could be referred to as the intelligentsia of crash-test dummies. After all, they are extremely sophisticated machines that can do more than simply take a hit. In fact, they're designed to act human. As such, they can think. (They are equipped with computers.) And they can feel. (They are wired with sensors and accelerometers, placed at strategic points throughout the body.)

Above all, our dummies are designed to help save lives, by showing us how our cars can better protect the people who ride in them.

So while it's still impossible for us, or any other carmaker for that matter, to build an automobile that will guarantee your survival in an accident, you can be assured of one thing: Our crash-test dummies are trying everything humanly possible.

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belts and obey all speed laws. For more information, call 800-872-5398 (800-USA-LEXUS).

INDEX

MARCH 7, 1994

Companies (bold type) and individuals in this issue are indexed to the first page of the article in which each is mentioned.

continued

INDEX

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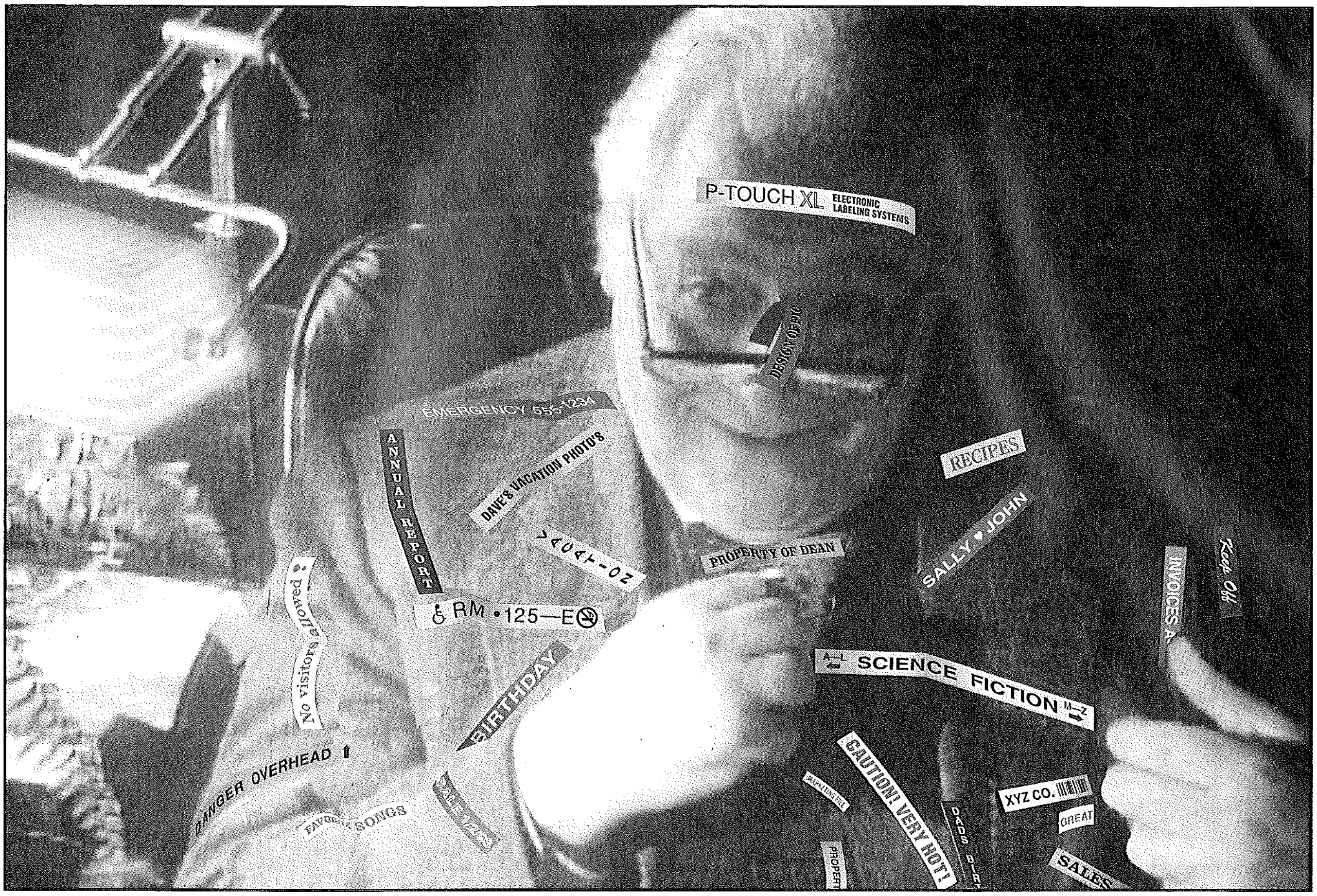
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RECIPES
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INVOICES A-
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PROPERTY OF DEAN
RM •125—E
No visitors allowed
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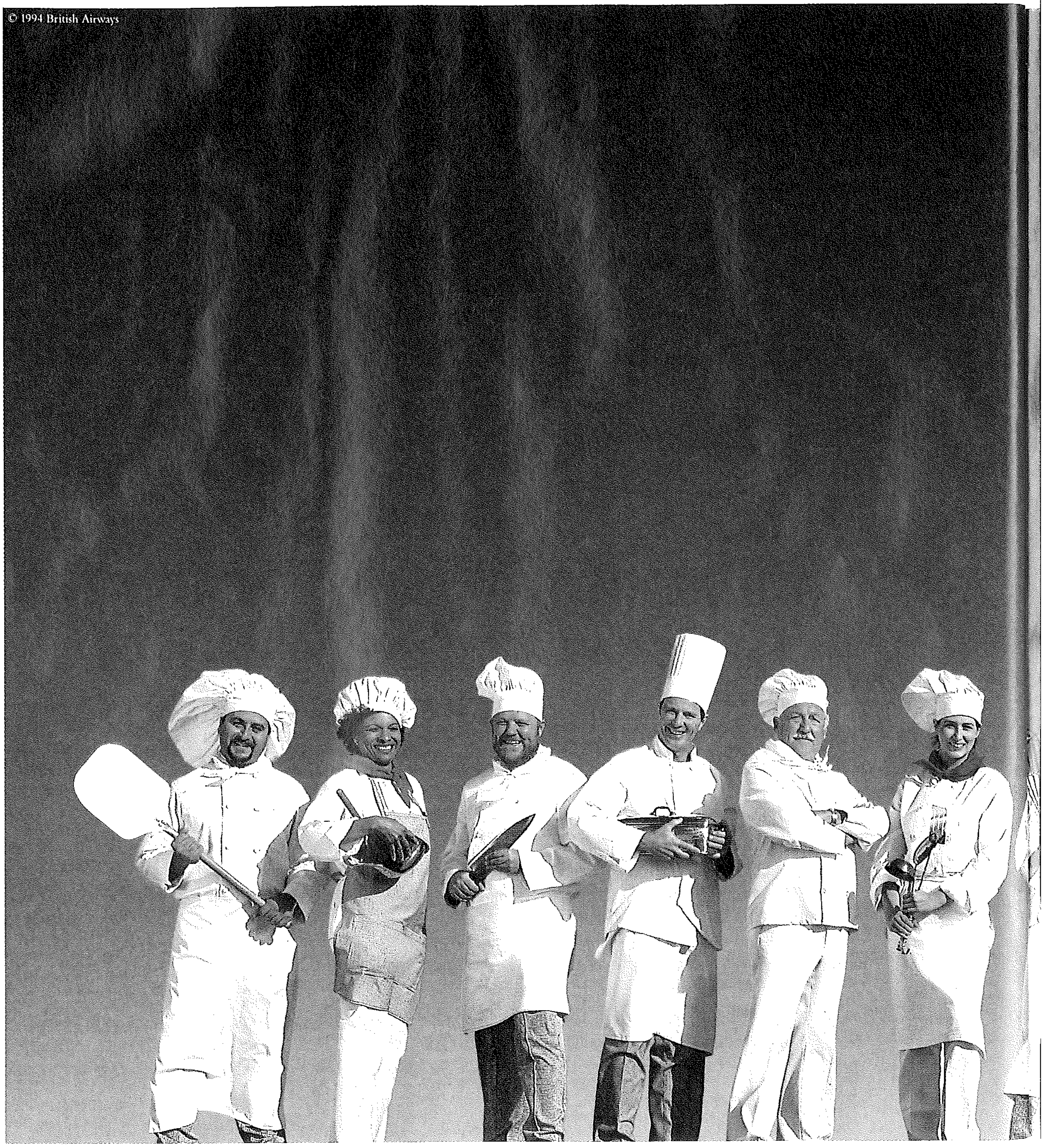
A–L SCIENCE FICTION M–Z
DANGER OVERHEAD
SONGS
CAUTION! VERY HOT!
XYZ CO.
GREAT
SALES

Some of our best ideas



Our international chefs have been firmly grounded in the fine art of providing you with it's our staff on the ground or our crew in the air, you'll receive the same high level of attention. *It's the*

TORIN BOYD

CRACKS IN JAPAN'S MARKET, BUT . . .

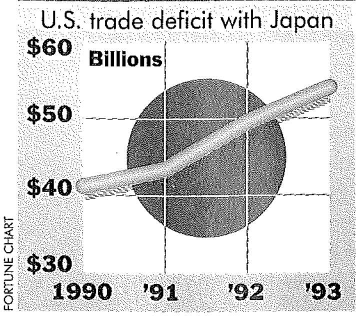
With the recent tête-à-tête between President Clinton and Japanese Prime Minister Morihiro Hosokawa come and gone, and still no trade accord in sight, even optimists might be feeling gloomy about the impermeable Japanese market. The U.S. continues to insist on objective criteria for measuring Japan's openness; the Japanese view this as a demand for managed trade.

Something has to give soon. The U.S. trade deficit with Japan has swelled to \$54 billion (see chart) and is expected to grow again this year. Japan's nagging economic doldrums haven't helped, as consumers there spend less on everything, including U.S. exports.

But if Japan isn't quite a golden goose for U.S. companies these days, it's no lame duck either. **Ford Motor**, for one, is making some new inroads. After marketing most of its vehicles for 11 years through a sales network shared with **Mazda**, Ford is now negotiating with **Nissan** and **Toyota** dealerships interested in selling its Taurus station wagons and Explorer sport-utility vehicles and may end up using both.

Many U.S. firms are angling for greater control of their Japanese operations. **Nike**, for example, recently took over its Japanese affiliate so that it could sell its own sneakers and no longer depend on the trading Goliath **Nissho**

TROUBLE



FORTUNE CHART

At left, Ford helps fight the deficit.

Iwai. Mattel, which for years licensed Barbies to Japanese toymakers, has improved results by setting up its own marketing and sales office in Tokyo. The company says that sales have almost doubled and Long Hair Star Barbie has become one of the top-selling dolls in Japan.

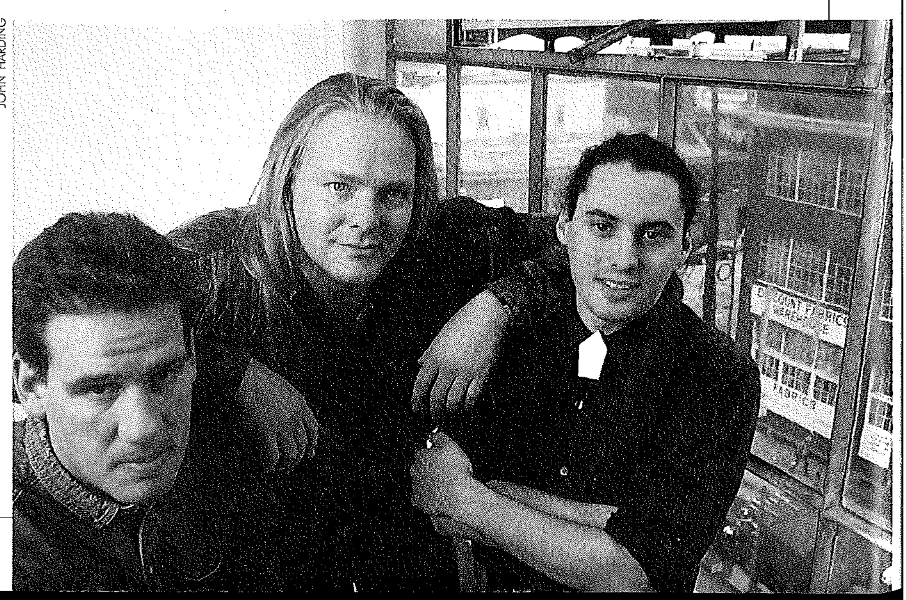
Barbie and other U.S. products should benefit at least a little from the \$140 billion stimulus plan that Hosokawa brought with him to Washington. But that clearly was not enough to placate Clinton, who had nothing to gain politically from making an easy accord with Japan. If the tensions don't ease up, trade sanctions could be next. **– Emily Thornton**

SAN FRANCISCO'S MULTIMEDIA GULCH

A new hot spot for high-tech startups is San Francisco's so-called Multimedia Gulch, a warehouse district hard by the ramps to the Bay Bridge. Here's where an urban breed of computer programmer—too hip to live in the banal suburbia of Silicon Valley—is getting together with the city's artists to create software filled with video, animation, and music.

In only a year or two of colonization, the Gulch has become a high-tech version of New York City's SoHo, with loft offices, trendy restaurants, and art galleries interspersed among factories and gas stations. Denizens include *Wired* magazine; director Tim Burton's animation studio; **Macromedia**, a leading maker of software used for creating CD-ROMs—and the San Francisco Multimedia Development Group, a trade association with 400 member companies.

Typical of the Gulch trend: **Vivid Publishing**, founded in 1990. The 18-person startup develops software and produces books such as *Demystifying Multimedia*. Vivid took over a 4,000-square-foot space previously filled with immigrant Chinese women hunched over sewing machines. Monthly rent: 60 cents a square foot, which is around one-third of downtown rates. Vivid's founders gutted the space and installed 4,000 feet of cable to connect their



JOHN HARDING

Vivid's Ken Fromm, Henri Poole, Nathan Shedroff

Macintoshes. Now a massage table occupies the conference room, and an iguana named Jim roams around freely.

Vivid's entrepreneurs say that San Francisco's lively and diverse subcultures and its anti-establishment aura contribute to a creative environment, as does the proximity of hundreds of photographers, designers, cartoonists, and documentary filmmakers. Says general manager and co-founder J. Sterling Hutto, 30: "There's a critical mass of creative people."

The market for multimedia software is still small, and employees are motivated more by creating great products than by making money, Hutto says. They are probably earning more than the Chinese seamstresses who are still working downstairs. **– Alan Deutschman**

TOP CO-BRANDED CREDIT CARDS

BANK	Companies	Millions of cards
Citibank	American Airlines, Apple, Ford, MCI, Sharper Image	12
Household	Ameritech, Charles Schwab, GM	10
Chemical	Shell Oil	2
Bank One	AAA, Compucard, Dean Witter, PaineWebber	2

FORTUNE TABLE / SOURCE: NILSON REPORT

WHAT'S NEW WITH CREDIT CARDS

■ Joint accounts are the bane of many a household, but not in the credit card business. Co-branded credit cards—those issued jointly by businesses and card companies, like those shown here—are gobbling market share. These cards typically offer discounts on cars and merchandise, or free airline tickets, in proportion to the amount you charge.

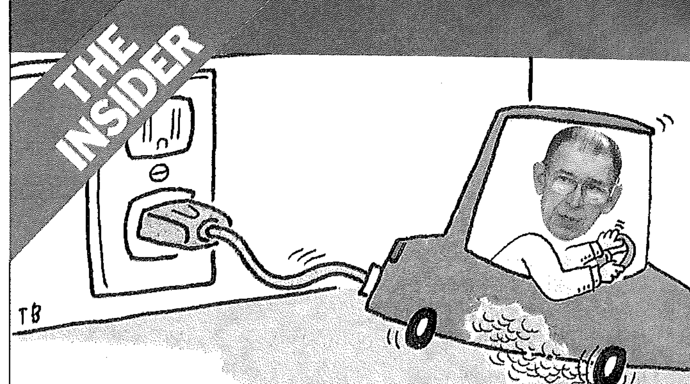
Winner in the pairs competition: **General Motors**' GM Card, issued through **Household International**, has grown to nearly 8.8 million pieces of plastic in just 17 months, according to *Credit Card News*. GM's card lets consumers roll up rebates for car purchases with each dollar charged. So far, auto-buying cardholders have cashed in 123,000 rebates, worth $40 million. Other recent partnerships include **Shell Oil** and **Chemical Bank**, and **Apple Computer** and **Citicorp**. The newest player is Japan's **JCB International**, which has a partnership

Sources of gas or computer discounts

with Household. JCB is likely to try to sign up business travelers and offer them theater tickets and other services, just as it does at home.

With co-branding, **MasterCard International** is turning into a hard-charging house. Partnered cards now represent 80% of the No. 2's new business and 38% of its volume. Through the third quarter of 1993, MasterCard's volume increased 23.5%, to $97.35 billion; No. 1 **Visa International** rose 16.6%, to $158 billion.

Co-branded cards are the shape of



PHOTOGRAPH BY JOHN ABBOTT

The buzz from business people ...

1. ELECTRIC CARS Now Bob Stempel's involved. Maybe he'll do for them what he did for GM.

2. JOHN SCULLEY He just left Spectrum claiming he'd been conned when he took the top job. Bet Jim Robinson wishes he'd thought of that one.

CINDY CHARLES—GAMMA/LIAISON

Insider?

3. DELTA AIRLINES They've cut out 12% of their transatlantic flights to try to become profitable. If every unprofitable airline follows, we may all be swimming to Europe.

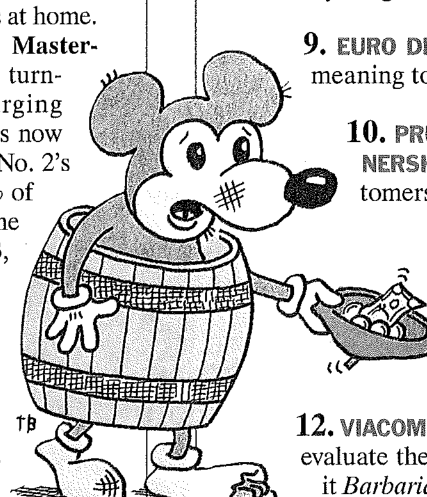
4. LIFTING THE VIETNAM EMBARGO If you can't beat 'em, give their kids *Beavis and Butt-head.*

5. NANCY KERRIGAN CBS sold out their Olympics commercials after she was attacked. Then NBC signed Kerrigan to host a *Saturday Night Live* episode. What can she do for ABC?

6. THE HEALTH SECURITY ACT Some people think everyone doesn't need coverage, just access. Sort of like jobs.

7. THE BIG ONE Freed from red tape, CalTrans is fast fixing L.A.'s transportation system. New York and Chicago are wondering whether to have quakes of their own.

8. THE BANK OF SPAIN MESS And Keating didn't even have anything to do with it.



9. EURO DISNEY A balance sheet that gives new meaning to the term "Mickey Mouse."

10. PRUDENTIAL SECURITIES LIMITED PARTNERSHIPS At least we know where the customers' yachts went.

11. CLINTON'S SECOND YEAR CEOs Harvey Golub and Bob Eaton have done well in *their* second years. Maybe the President should trade *Air Force One* for stock options.

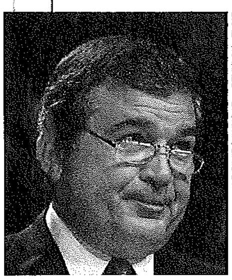
12. VIACOM VS. QVC Traders are still unsure how to evaluate the different bids. Maybe they should call it *Barbarians Sitting on the Fence*. **–Alison Rogers**

ILLUSTRATIONS BY TOM BLOOM

things to come, believes Spencer Nilson of the *Nilson Report*, an industry newsletter. Says he: "At least half of all cards in the country will be co-branded. There's nothing going to stop it." The paired cards are prompting consumers, who now average three cards, to condense their spending on one card to get the goodies. **– Bill Saporito**

SCORE TWO FOR BIG BLUE

■ Going over the specifications for a Pentium or PowerPC computer chip is like measuring the engine of a Ferrari. You can tell it's fast by looking, but it's much more fun to drive it.



BRAD MARKEL—GAMMA/LIAISON

IBM's Lou Gerstner

Buyers of computers face a tough dilemma: Both chips are Ferraris. **Apple Computer** and **IBM** will soon unveil new machines housing the PowerPC chip the two companies have developed with **Motorola**. These computers should be priced under $5,000. That's competitive with models that run on **Intel**'s Pentium.

The result of the drag race? Lower prices. If you think you don't need the juice of the new chips, the computer industry will sell you on cheap power and its applications. You'll be able to work on a spreadsheet simultaneously with another user a thousand miles away.

As a consumer, you'll probably stay true to your school—buying a Pentium PC if you've now got an Intel-based computer (read IBM or IBM-clone) or trading up to a PowerPC machine if you're on a Macintosh. "About 10% of the world buys Macs," says Ken Lowe, semiconductor analyst at Dataquest in San Jose. "That's roughly the percentage you'd expect to buy a PowerPC."

IBM wins either way. It has licensed the designs for Intel's previous chips and makes them in-house, but they'll outsource the Pentium. So IBM will avoid the hassles of producing this complex chip, but as the largest Pentium customer, it will get great volume discounts. The company will make only PowerPC in-house, focusing its business and lowering costs. Make that two Ferraris for IBM's CEO, Lou Gerstner. Big Blue ones, please. **– A.R.**

TEETH IN THE HEALTH CARE PLAN

■ Love to hate the Clintons' health care plan? Then consider this: A wrong turn through its maze of complex new rules could bury you in fines . . . or land you in jail, maybe for life.

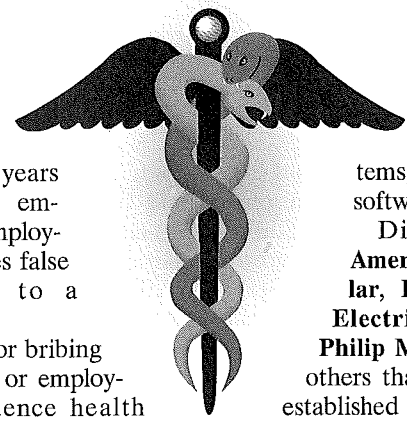
"For small business that can't afford to keep legal counsel around, it's a disaster," warns Caroline Stinebower, a lobbyist for the National Federation of Independent Business. But big business should also beware, for its executives face similarly tough penalties. Among the potential fines:

▶ $5,000 or more for employers who fail to pay their premiums.

▶ $10,000 for doctors or insurers who don't use the standard benefit form.

▶ $100,000 for late reporting by big businesses that self-insure.

The jail sentences spelled out in the Clinton plan:



▶ Up to five years for anybody, employee or employer, who makes false statements to a health plan.

▶ Up to 15 for bribing plan officials or employees to influence health care decisions.

▶ Up to ten for health care fraud by patients or employers, and life if serious bodily injury results.

Just in case, better call your lawyer. **– Ealena S. Callender**

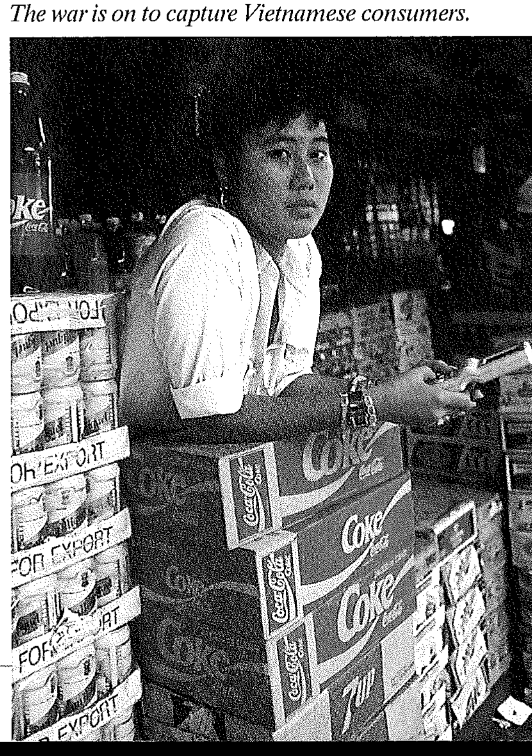
GOOD MORNING, VIETNAM II

■ What if every one of Vietnam's 72 million people bought a pair of shoes? That's today's version of a question that used to be asked about China. No wonder U.S. companies are rushing to do business in Vietnam now that President Clinton has lifted the 19-year-old embargo. Says Tom Ehrgood, international trade counsel for **Digital Equipment**: "We see concrete needs in Vietnam—PCs, efficient information systems, training, and software."

Digital, **BankAmerica, Caterpillar, IBM, General Electric, Motorola, Philip Morris**, and 27 others that had already established representative offices in Vietnam seem to have an early lead. Even more companies, including **Boeing**, which wants to replace Vietnam Airlines' Russian fleet, are positioned to do business there. The Big Three automakers are considering assembly plants, tapping into Vietnam's educated work force.

The multibillion-dollar prize: rebuilding Vietnam's roads, power lines, ports, airports, schools, and other components of its infrastructure. Consider Highway 1, the country's main north-south vein, which suffers from decades of neglect. Says William Agee, CEO of **Morrison Knudsen**, a major contractor in Vietnam from 1962 to 1972: "We're excited about returning to a country where we're known as a can-do company."

The war is on to capture Vietnamese consumers.

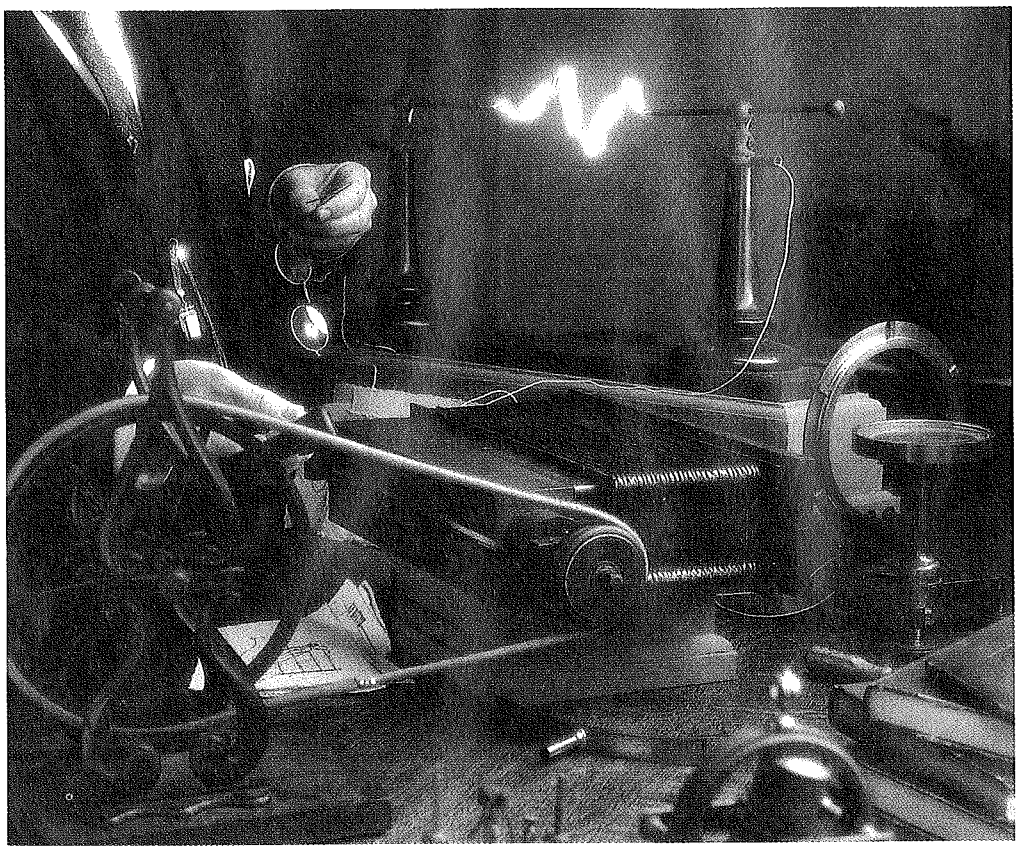


GREG GIRARD—CONTACT

Meanwhile, consumer-goods companies, including **CPC International**, maker of Hellmann's mayo, Skippy peanut butter, and Knorr soups, hope to find retail customers. A war has already broken out between Pepsi and Coke, and skirmishes between Seagram's and other distillers are sure to follow. Still, U.S. companies have a lot of catching up to do. Rivals from Australia, France, Taiwan, Hong Kong, and, increasingly, Japan have a head start in selling

SIEMENS

1866. That was then.



Shortly after his 50th birthday, Werner Siemens invented the world's first electric dynamo, and began the revolution that brought electric power to everyone, everywhere.

consumer products, building hotels, assembling cars and televisions, and drilling for oil.

A hidden U.S. advantage: the million or so Vietnamese who have settled in America. Many have already invested in small businesses in the South, and more are sure to do so now that it is legal. **– Justin Martin**

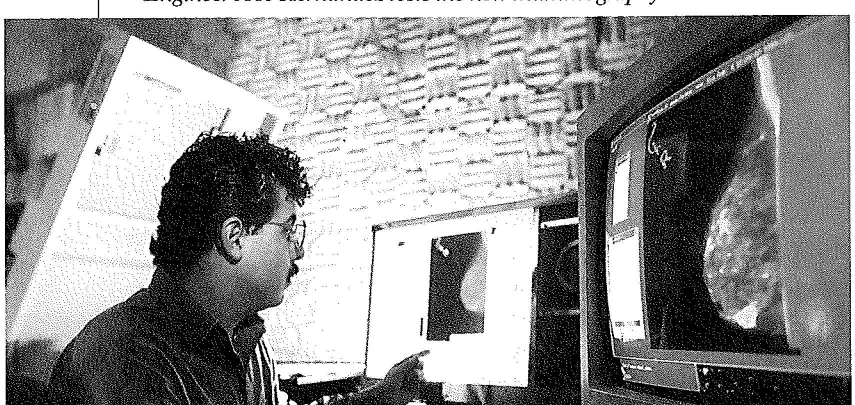
STAR WARS MAMMOGRAPHY

If star wars scientists can create imaging technology that detects imperfections in bombs and missiles, why not the same for human tissue? **Lawrence Livermore National Laboratory** is doing just that: The longtime weapons lab has teamed with **Fischer Imaging**, a Denver company, to develop a digital mammography device that will produce pictures of women's breasts that are clearer and will use less radiation than conventional machines. Morgan Nields, Fischer's CEO, says the device will be ready for FDA consideration next year.

Funding for the Livermore/Fischer partnership comes from the Energy Department, which along with the Defense Department is scrambling to find commercial applications for military research. So far the two agencies have targeted 840 such projects, worth more than $1 billion. Beneficiaries, who generally put in matching funds, include **Chrysler**, **Caterpillar**, and **Xerox**.

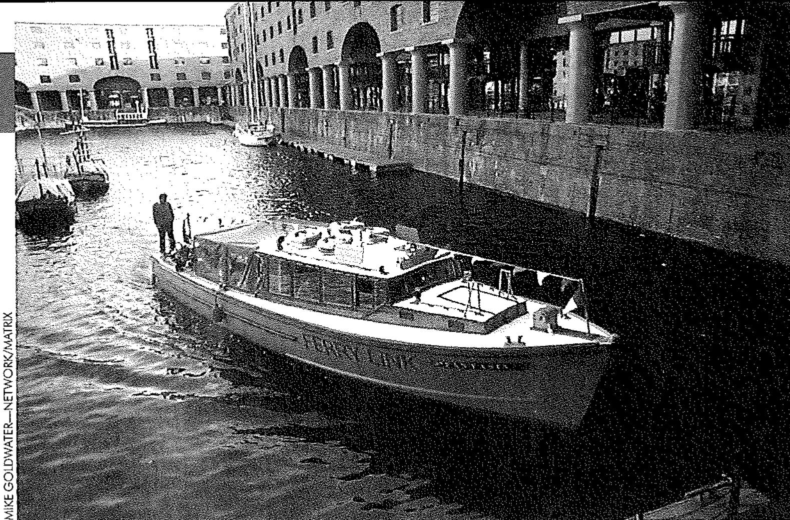
In turning its high-tech weaponry into plowshares, the U.S. military will soon cross swords with an old adversary. Since May, a U.S. company called East/West Technology Partners, a consortium with ties to the Russian Academy of Sciences, has been selling Soviet military technology with commercial potential to U.S. companies, including subsidiaries of **Unisys** and **Amoco**. Among the goodies in its grab bag are advanced algorithms that make computers run faster and a deodorizer than can mask 99% of the disagreeable smells in a room.

Engineer José Hernandez tests the new mammography machine.



ED KASHI

Very little in the way of finished products has emerged from either country. One reason, says Jon Kutler, managing director of Quarterdeck Investment Partners in Los Angeles: "Government bureaucracy. You can't get defense conversion until you convert the government. The only way to make military technology commercially viable is private capital." Enter Quarterdeck, a startup that hopes to provide that solution. In March 1993, just two months after forming his company, Kutler funded his first venture: He put nearly $2 million into a deal in which **A&H International Products** bought defense electronics technology to make a pager that beeps when a toddler wearing the high-tech gadget begins to stray. BeeperKid should be on the market later this year. **– Nancy J. Perry**



MIKE GOLDWATER—NETWORK/MATRIX

Part of any tour of the Beatles' hometown; a ferry across the Mersey

COMEBACK FOR LIVERPOOL

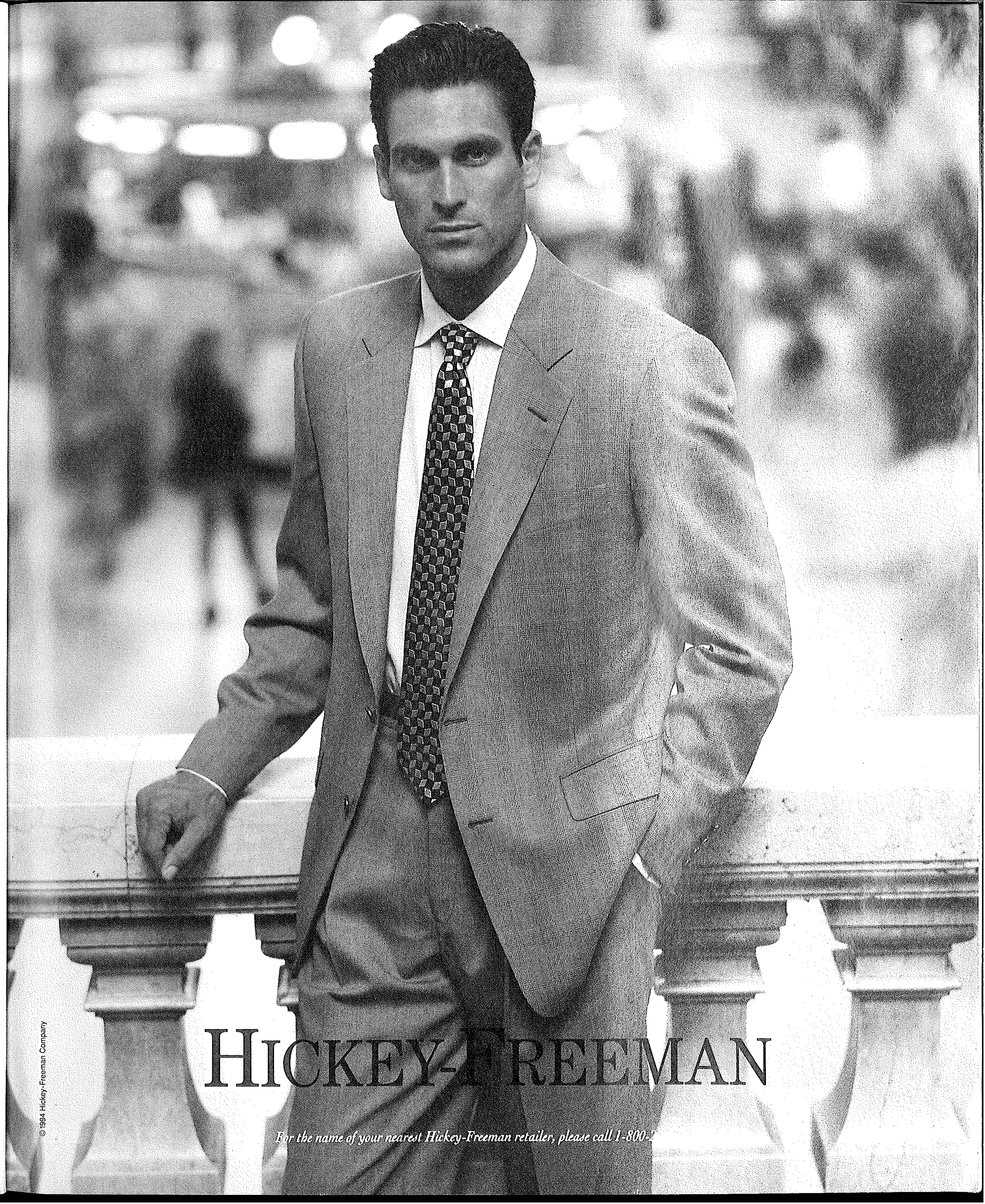
Beatle fans, take note. Paul, George, and Ringo are staging a comeback—and so is their old hometown, Liverpool. Spurred by some ugly riots, fed largely by growing unemployment, the British government and local businesses got together in the early 1980s and have since invested nearly $900 million in Liverpool's infrastructure, housing, and amenities. The result: Some Liverpool industries are bouncing back. For example, the city's Mersey port is now one of the most profitable and productive in Europe, and the once derelict docks house a maritime museum, a busy shopping mall, and a Magical Experience tour that includes a visit to a rebuilt Cavern Club, where the early Beatles played. The Liverpool Institute of Performing Arts, which counts Paul McCartney among its financial backers, is scheduled to open in 1995.

The Merseyside renaissance is also pulling in foreign investors. The largest so far: Cable North West, a joint venture between **Southwestern Bell** and **Cox Communications**, is pumping $700 million into a new fiber-optic cable and telephone network for the area. While unemployment still haunts Liverpool, Merseyside ventures have added jobs, 4,300 of them in 1993. **– Carla Rapoport**

NOW HEAR THIS

ALAIN C. ENTHOVEN, 63, a professor at Stanford B-school, on the reduced HMO premiums negotiated by the California Public Employees Retirement System (Calpers):
"Competition works, not compulsion."

JOANNA FILOMENA, 54, of Filomena's, the Washington restaurant where President Clinton, a McDonald's fan, took German Chancellor Helmut Kohl:
"The President really enjoyed the calamari. Maybe the myth of French fries will be thrown out the window."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BY JOSEPH SPIERS

THE ECONOMY IS WARM, NOT HOT

■ After percolating fitfully for what seems like centuries, could the economy suddenly be overheating? Growth surged at the end of last year. Workers' wages and hours jumped in January, and a widely followed purchasing managers' survey found that manufacturing, already strong, kept up its momentum. Auto and light-truck sales have revved up to the highest level since 1989, and even the long-depressed heavy-construction industry has shown signs of life (see following story). When the Federal Reserve subsequently nudged interest rates up, the implicit message was: Not only is economic growth strong, but it may be too strong, eventually leading to higher inflation.

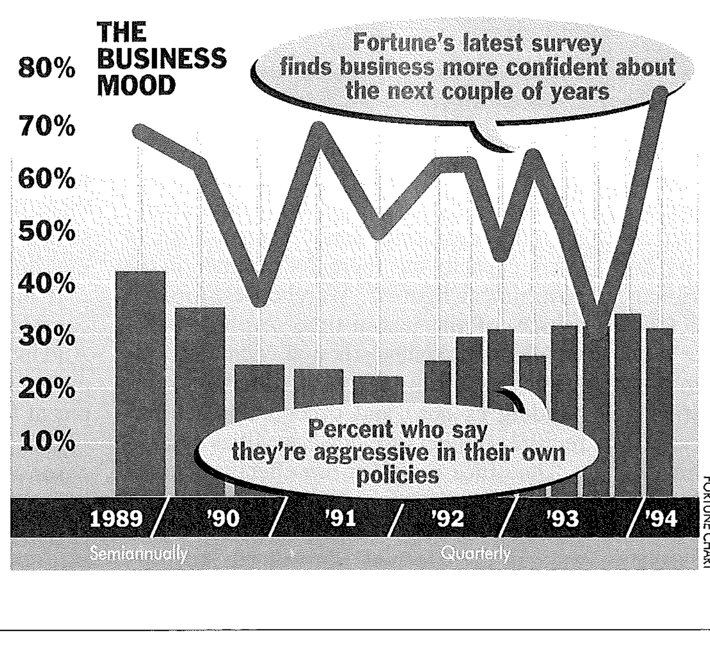
The economy is undoubtedly doing fine. But it's warm, not hot. Growth in the first quarter is slowing toward the 3% rate that FORTUNE forecasts for 1994 as a whole. Exhibit A: the labor market, which generated only a small number of new jobs in January. While harsh weather surely constrained employment growth, unemployment claims have been rising since the beginning of the year to the highest level since late 1992. In January corporations announced almost 109,000 job reductions, the most since monthly company layoffs were first tracked in 1989, reports Challenger Gray & Christmas, an outplacement consulting firm. The bloodletting goes on. AT&T said in February it will eliminate 15,000 jobs—8,000 of them managerial—over two years. Meanwhile, retail sales in January slumped 0.5%, surprising analysts, even considering the bad weather.

FORTUNE's latest business mood survey neatly captures the sense that "things are fine, but . . ." Nearly three-quarters of the 234 respondents said their businesses as of late January and early February were good or very good, continuing an upward trend that began in the spring of 1992. And three-quarters said they were confident about business conditions in the next two years, up dramatically from 50% last fall and the highest reading since 1986. Yet respondents also said they were not as aggressive in their policies—such as hiring and advertising—as they were in mid-1990, just before the recession started. Only a third intend to increase employment this year. A quarter plan to cut jobs, and the rest expect no change.

Downsizing, in turn, promotes caution among smaller businesses. "The white-collar layoffs are scaring even the wealthy from purchasing luxuries," says Michael Light, owner of Bartel's & Co., a wholesale jeweler in St. Louis. A Cadillac-Oldsmobile dealer in the same city says some of his customers hesitate to trade in their aged vehicles because of job insecurity.

THE BIGGEST WORRY, though, is the Clinton health care plan. "Retail businesses will be hurt—costs will skyrocket," says the CFO of a regional department store chain in Ohio. "Companies clearly are holding back on adding to staff out of fear of not knowing their future costs," asserts a Cleveland bank official. Adds Juan Portillo, the president of an Austin, Texas, travel agency: "It should be up to each individual business to gauge health insurance affordability to remain competitive."

If business stays cautious, the expansion will be restrained. But this wariness will also help sustain growth by preventing excesses—from inventories and payrolls to balance sheets and buildings—that would eventually have to be corrected. It might even help rein in the excesses of the Clinton health plan.



Despite sharply rising confidence, businesses are cautious about hiring and spending. One worry: Some of their customers fear for their jobs.

OVERVIEW

- **Growth is slowing from the roaring fourth-quarter pace.**
- **Downsizing and health plan fears hobble the job market.**
- **But heavy construction will help the expansion at last.**

COMMERCIAL BUILDING MAKES A COMEBACK

■ The formerly long list of nasty, brutish deterrents to economic growth has become short. Gone are oppressive consumer and corporate debt service, a burgeoning federal deficit, failing S&Ls, undercapitalized banks, uncompetitive manufacturers, bloated service companies, soaring oil prices, fears of plunging home prices. Now you can scratch another downer—commercial and industrial construction.

The foundation has been laid by gradual increases in demand for space, coupled with a supply adjustment—namely, the depression in new construction that followed the ridiculous overbuilding of the 1980s. Outlays for retail and industrial buildings have already turned up (see charts, next page), and office construction has about hit bottom.

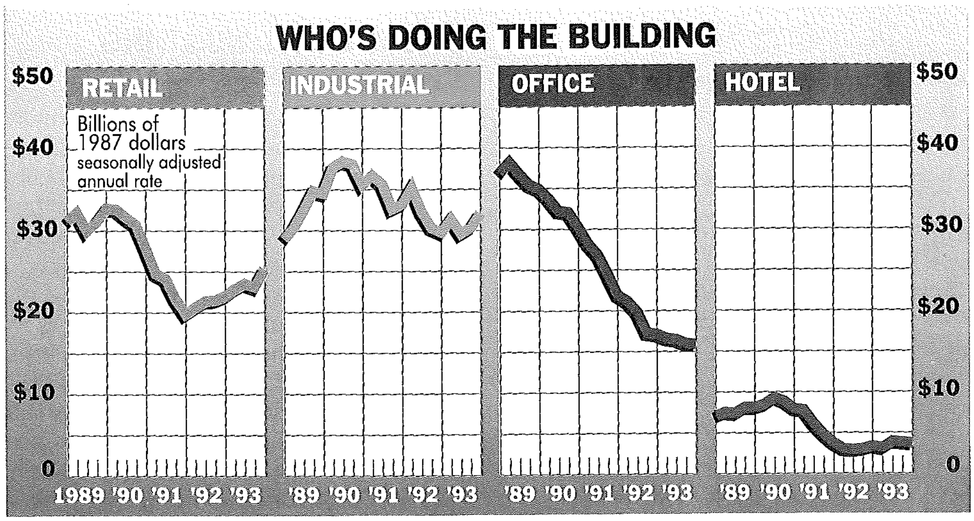
The dim light bulb at the end of the corridor does not signify a boom. Activity will remain low by 1980s standards. And hotels, after getting a boost from Las Vegas resorts recently, will likely tumble in the next couple of years. Overall, though, commercial and industrial construction

will stop yanking economic growth down—the slump accounted for nearly a fifth of the drop in GDP during the 1990–91 recession. The industry will do some $90 billion of business this year, up 4% from 1993.

Retail construction—shopping centers and malls as well as single stores—will lead the way. Besides the recovery in consumer spending, credit the homebuilding surge of the past two years: New subdivisions call for stores nearby. Since shopping centers go up roughly a year after the houses, further construction is guaranteed. For example, groundbreaking for a new mall is slated for this fall in northwestern Albuquerque, where many new houses have been built, says J. Howard Mock, CEO of Jaynes Corp., a general contractor.

Another plus is the push of discounters and "big box" merchandisers like Home Depot and PriceCostco into new geographic territories. In the past two years Jaynes Corp.

Besides stronger consumer spending, credit the homebuilding surge for the rebound in retail construction.



FORTUNE CHART

has built five Wal-Marts. Most construction will occur in the South and West, excluding California, because that's where the population and job growth is. But economic wreckage in the Northeast also provides opportunity. In downtown Boston, Homart Development Co. will renovate a failed three-story mall into a "power center" that will boast three or more big boxes as anchors.

Factory and warehouse construction is starting to clank into action in response to rising industrial production and falling vacancy rates. Cushman & Wakefield, a national realty firm, reports that industrial leasing rose in seven of ten major markets last year, with Chicago and Atlanta especially strong. Tennessee's growing role as a distribution hub has squeezed warehouse capacity along Interstate 81, causing developers to plan additional facilities there, says New America Network, a consortium of brokerage firms. Distribution is a growth industry in Texas too, where NAFTA is providing the spark. And construction this year on BMW's new plant in South Carolina and the Mercedes plant in Alabama will also fuel building by auto parts suppliers in other Southeastern states.

But don't look for a surge. Companies that reengineer the factory floor and adopt just-in-time techniques can install extra machinery without adding bricks and mortar, says manufacturing expert Michael Cantwell of Grant Thornton, the accounting and consulting firm: "There's a lot of latent capacity out there not included in the government figures." Warehouses, too, are victims of the just-in-time revolution that shrinks stockpiles—though demands for faster response will also stimulate some building as auto and other manufacturers require suppliers to locate facilities nearby.

The office hangover has effectively killed the speculative projects that dominated construction in past years, says David Binswanger, president of Binswanger Advisory Group in Philadelphia. A few are going forward in suburbs and smaller cities, where fast-growing companies tend to locate. But, he adds, "on a national scale, these special cases don't even make it onto the radar screen."

True, the expanding economy has been slowly creating office jobs. CB Commercial, a large real estate services firm, calculates that last year business absorbed 39 million square feet of office space, net, in the suburbs and 12 million downtown. That pushed the year-end office vacancy rate down to 17%, the lowest in eight years. But it's not enough to generate new speculative building. Even if developers wanted to take a shot at Russian roulette, they'd find it impossible to get financing. Real estate experts are unanimous in predicting no rebound in construction of multitenant offices for several years at least.

Construction will instead be driven by companies that want customized space for their own use, such as Wachovia Corp., NationsBank, and Sara Lee, all building in the Winston-Salem, North Carolina, area. Contractors will also find work renovating buildings that may be only a decade or two old but don't have infrastructure for heavy-duty voice and data transmissions.

HOTEL AND MOTEL construction will be taking an extended vacation. Glitzy, high-profile resort hotels completed in Las Vegas last year created the illusion of a rebound, but that's history. As with office buildings, far too many hotels were built in the past decade. And now the lodging industry must endure budget-conscious families and corporate customers trying to keep travel costs to a minimum. Coopers & Lybrand economist Carol Greenberg predicts that the number of rooms started will slump more than 20% in the next two years. Any new construction will be primarily for small hotels that limit amenities such as restaurants.

It has taken commercial and industrial construction three years to join the recovery. And like the rest of the economy in the early part of this expansion, its growth will be subpar at first. **–J.S.**

CHIEF ECONOMIST *Vivian Brownstein*
ASSOCIATE ECONOMIST *Joseph Spiers*
RESEARCH ASSOCIATES *James Aley and Lenore Schiff*
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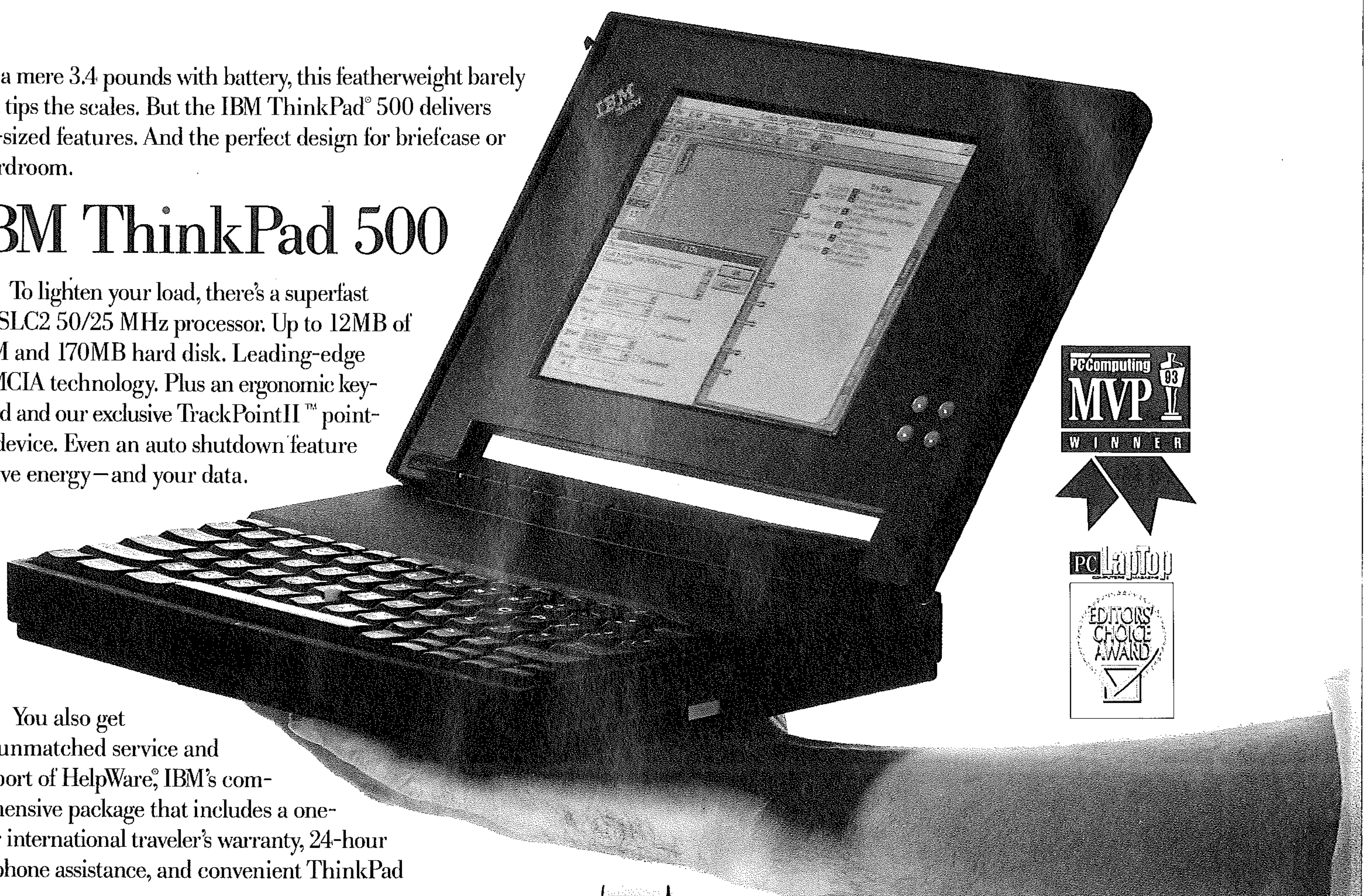

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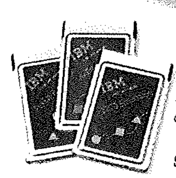

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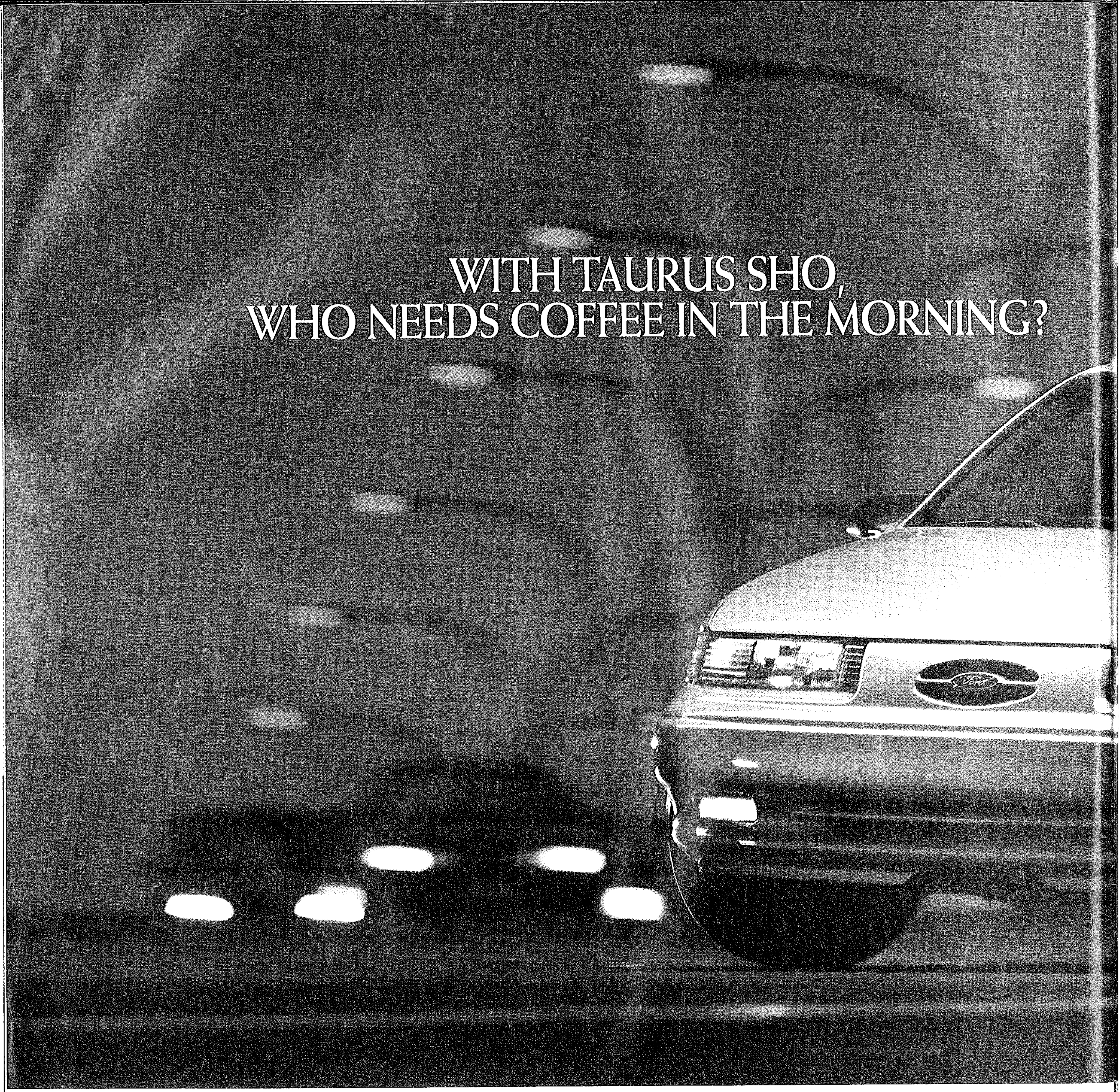

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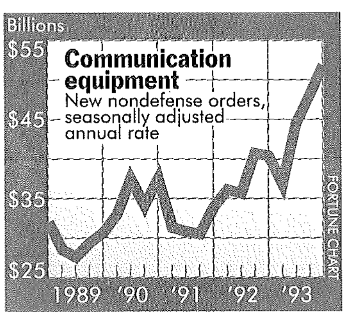
Economic Intelligence

PAVING BEGINS ON THE INFO HIGHWAY

■ No one knows exactly what the information superhighway will be, let alone what it will cost. No matter: Work has begun. In the past two years, new civilian orders for communications equipment have risen 53%, to an annual rate of $52 billion, and shipments have increased 46%, to $50 billion. Economist Rosanne M. Cahn of CS First Boston expects continuing double-digit gains for the "foreseeable future."

A lot of the spending is coming from the regional Bell operating companies (RBOCs). US West recently accelerated its plans to build a multimedia network. It intends to spend $500 million annually between 1995 and 2002 on multimedia services alone. Pacific Bell and Bell Atlantic each plan to invest about $15 billion in their networks over the next several years. Cahn's colleague James Parmelee figures the other RBOCs are likely to announce similar plans within a few months. Another big spender is MCI, with a seven-year, $20 billion program. Suppliers are salivating. Satinder Mullick, chief economist at Corning, expects its glass-fiber volume to increase 30% a year for the next seven years as demand explodes.



Cahn figures the roadwork will add 0.2 percentage point to GDP growth this year. If the pace holds up, it will have an even bigger economic impact than its metaphorical progenitor, the interstate highway system. That heroic project contributed less than 0.1 point per year during the peak period from 1951 to 1959. **– James Aley**

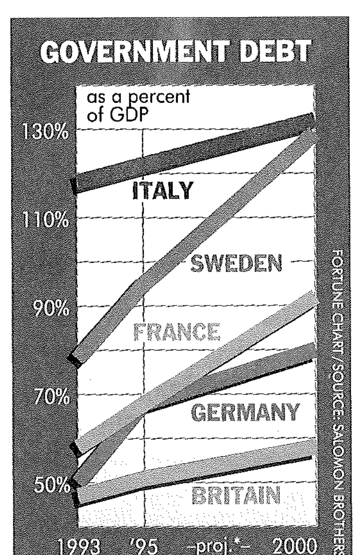
DEBT TRAP

■ Government deficits are out of control, and swelling public debt threatens to squelch the economy. Sound familiar? But now it's Europe's turn. Economists at Salomon Brothers estimate that high deficits will push government debt up rapidly throughout Europe even after its economies head out of recession next year (see chart). On the course set by President Clinton's new budget, by contrast, U.S. debt will remain steady at 52% of GDP. Even including the Clinton health care plan wouldn't push it up significantly.

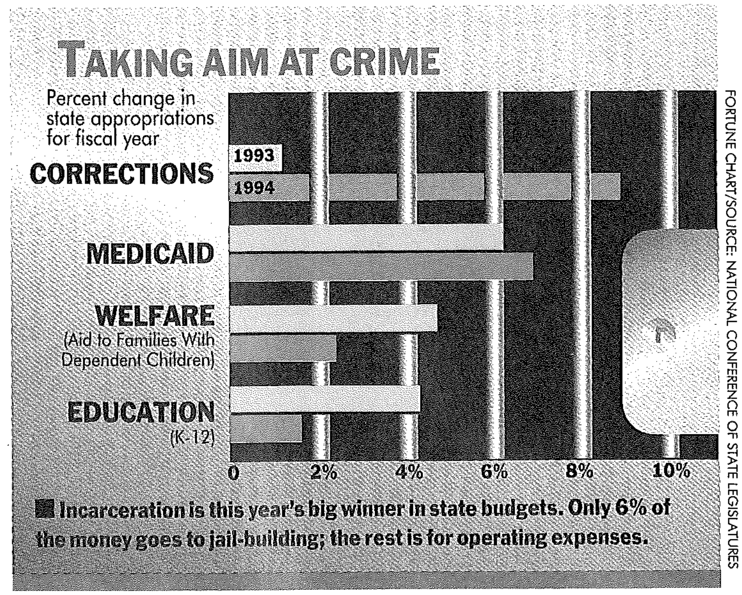
The Old World's fiscal problems are deep-seated, says chief economist John Lipsky. Treasuries are straining to support money-losing state industries, from coal mines to airlines. Unemployment will hang high because rigid labor laws and regulatory burdens stifle job creation and new business formation even when economies are growing. So taxpayers will be stuck with paying for famously generous jobless benefits. And with a smaller proportion of workers supporting a larger and faster-growing population of retirees than in the U.S., pay-as-you-go pension systems are stretched to the max.

To keep the debt burdens from rising higher would require severe spending cuts in Europe's capacious social welfare systems or large tax increases—or both. But with 16 presidential and parliamentary elections scheduled over the next four years, financial markets are dubious that politicians will prescribe such bitter medicine.

The likely result: Governments will have to pay higher interest rates to lure reluctant buyers of shaky public bonds, siphoning off money from productive private investment. Lipsky doesn't rule out a repeat of the financial crises that roiled European currency markets in 1992 and 1993. The debt trap, he warns, "seriously threatens to undermine Europe's competitiveness and long-term economic growth potential." **– Louis S. Richman**



*Assumes long-term interest rates increase by one percentage point.



■ Incarceration is this year's big winner in state budgets. Only 6% of the money goes to jail-building; the rest is for operating expenses.

THE BIG PAYOFF FROM COMPUTERS

■ Economists have tried to figure out for years why American companies poured hundreds of billions of dollars into computer technology without getting significant gains in output. Economist Erik Brynjolfsson and doctoral student Lorin Hitt of MIT's Sloan School of Management have finally explained this so-called "productivity paradox": There wasn't one. Indeed, the FORTUNE 500 companies they investigated have earned an eye-popping 67% return after depreciation on their investments in information technology.

Brynjolfsson and Hitt calculated returns on investments in information systems for 367 industrial and service companies from 1987 through 1991. By contrast, the earlier studies that suggested slender gains relied on obsolete data from the 1970s and early 1980s. The large, up-to-date sample revealed the benefits of reorganizing around the new technologies—improved quality and customer service, greater product variety, and speed. "If there ever was a productivity paradox," says Brynjolfsson, "it disappeared by the late 1980s." **– L.S.R.**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UNITED AIRLINES

BY RICHARD S. TEITELBAUM

BEATING PUNY CD YIELDS—SAFELY

■ Pity the lowly certificate of deposit. Despite all the hoopla over the recent uptick in short-term interest rates, the three-month variety still earns a miserly 3.1% on average these days. With 3% inflation and today's higher income taxes, amigo, you're losing money. Small wonder investors ask whether CD really stands for Currently Diddlysquat.

Seekers of safety needn't despair. You can find better payouts by tiptoeing ever so gingerly up the ladder of risk. For example, U.S. savings bonds held for five years yield at least 4% and are exempt from state and local taxes. Some bond funds bring security with diversified holdings. But how can investors weigh the risks and rewards of the many funds claiming to be safe?

The key is learning to assess two kinds of danger: the risk of credit downgrades and that of fluctuating interest rates. Credit risk is easy to understand—some bond issuers are less likely to default than others—and it's even easier to deal with. Buy only funds that invest in bonds rated AA or better by Standard & Poor's, like those of the U.S. government and blue-chip companies.

Interest rate risk starts out simple too: When rates rise, a bond's value falls, and vice versa. But this basic rule can get complicated. For example, if rates rise, zero-coupon bonds drop far more in price than interest-paying bonds of the same maturity because investors must wait until the zero matures before they can start reinvesting at new, higher rates.

To cut through the confusion, use a measure of interest rate risk called "effective duration," which takes into account not only a bond's maturity but also varying coupons, payment schedules, and call features. It totes up the current discounted value of all interest and principal that will be paid over the bond's life and tells investors the weighted average length of time it will take them to get their hands on it. For example, a 30-year zero-coupon has a longer duration than a 30-year conventional bond because it doesn't pay a cent until the day it matures. The longer the bond's duration, the greater the interest rate risk.

Duration may seem complex, but using it is a piece of cake. A fund with an average duration of five years is twice as volatile as one with a 2.5-year duration. Investors who want sanctuary from interest rate swings should therefore buy funds with short average durations. Says editor Ralph Norton of the *Bond Fund Advisor*: "For people seeking safety, stick to average durations of two to three years."

Bond funds will often tell you their average duration, and Morningstar, the mutual fund service, this year is adding an average-duration figure to bond fund appraisals. Armed with credit and duration information, investors can track down funds that fit their prescription for safety.

Among the safest short-term corporate bond funds is the **Neuberger & Berman Ultra Short Bond** fund, yielding 3.2% with an average duration of just one year and rock-solid AAA credit quality. Those willing to take on slightly more credit and interest rate risk might consider the AA+ quality **T. Rowe Price Short-Term Bond** fund, which invests in out-of-favor sectors, such as mortgage-backed bonds. It has a 2.1-year duration and boasts a yield of 5%. For daredevils among the safety set, the **Scudder Short Term Bond** fund has a 1.5-year duration and AAA– quality. It earns its 5.3% yield by stocking up on quality foreign bonds and some esoteric notes.

Rising income taxes make short-term municipal bond funds a better deal for many. But if you plan to stick with short-term funds, your choices will be limited; most muni funds have long durations. Exceptions include the **USAA Tax Exempt Short-Term** fund with AA credit and a duration of 2.3 years. It yields 3.3%, equal to a

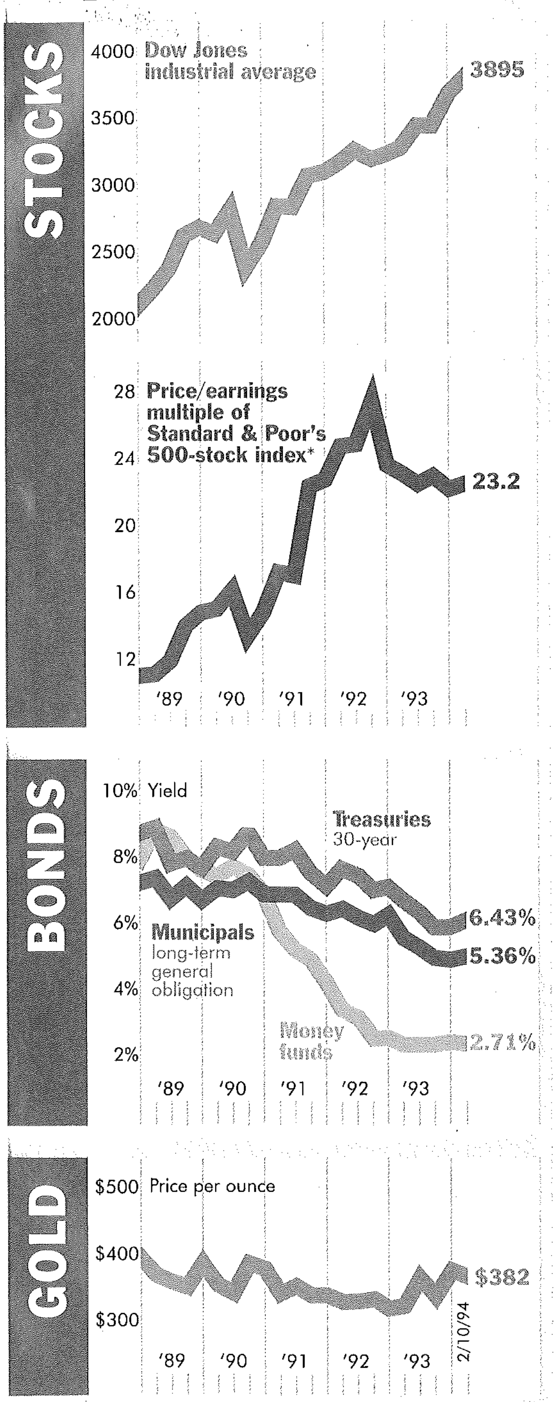
SAFE HARBORS IN BOND FUNDS

R. KLEIN FOR FORTUNE

FUND & PHONE NUMBER	YIELD	DURATION	QUALITY
CORPORATES			
Neuberger & Berman Ultra Short Bond 800-877-9700	3.2%	1.0 year	AAA
T. Rowe Price Short-Term Bond 800-638-5660	5.0%	2.1 years	AA+
Scudder Short Term Bond 800-225-2470	5.3%	1.5 years	AAA–
MUNIS			
USAA Tax Exempt Short-Term 800-382-8722	3.3%	2.3 years	AA
Vanguard Municipal Bond Limited-Term 800-992-0414	3.4%	2.7 years	AA

FUND & PHONE NUMBER	YIELD	DURATION	QUALITY
TREASURIES			
Benham Treasury Note 800-472-3389	4.2%	3.4 years	AAA
Vanguard Fixed Income Securities Short-Term U.S. Treas. 800-992-0414	4.1%	2.2 years	AAA
Vanguard Fixed Income Securities Inter.-Term U.S. Treas. 800-992-0414	5.2%	5.1 years	AAA
ARMS			
Fortress Adjustable Rate U.S. Government 800-245-5000	3.2%	0.5 year	AAA
Benham Adjustable Rate Government Securities 800-472-3389	4.8%	0.7 year	AAA

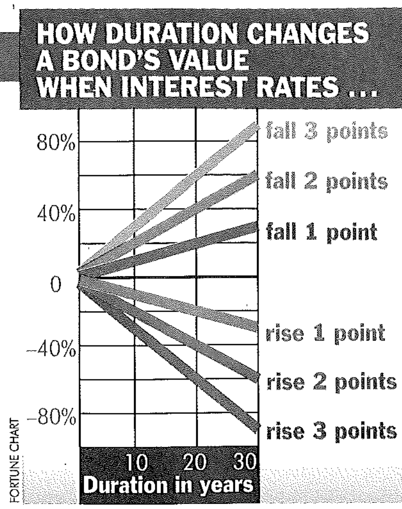
STATE OF THE MARKETS



*BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.
FORTUNE CHARTS / SOURCES: STANDARD & POOR'S; BOND BUYER; IBC/DONOGHUE'S MONEY FUND REPORT; COMMODITY EXCHANGE

taxable 5.5% for an individual in the highest income tax bracket. The **Vanguard Municipal Bond Limited-Term** portfolio, also AA, with a duration of 2.7 years, sports a 3.4% yield, or a 5.6% taxable equivalent.

U.S. Treasury bond funds carry no credit risk, but of course those invested in long-term securities get hit if rates jump. When that happened in early 1992, the average Treasury fund lost 2.5% of its value—hardly a calamity, but reason for the truly risk-averse to lean toward shorter-term funds. The **Benham Treasury Note** fund, with a 3.4-year duration, yields 4.2% annually. The **Vanguard Fixed Income Securities Short-Term U.S. Treasury** portfolio yields 4.1% with a 2.2-year duration; an intermediate-term version yields 5.2%.



Duration is a measure of interest rate risk based on a bond's maturity and other features. A bond fund can usually tell you its holdings' average duration.

Adjustable-rate mortgage (ARM) funds, because they invest primarily in mortgage securities of U.S.-backed agencies, carry AAA credit quality. But if you eliminate funds with loads and those with high minimum investments, investors' choices are few. The supercautious **Fortress Adjustable Rate U.S. Government** fund—with a duration of just six months—shuns risky derivative mortgage-backed bonds and yields 3.2%. Those willing to risk some loss of capital from a smattering of such derivatives may want to consider the **Benham Adjustable Rate Government Securities** fund. It's still a safe ARM fund; with a duration of less than a year, it yields 4.8%.

Once invested, don't fret unduly about any of these funds. Notes Jeff Kelley, an editor at Morningstar: "You're risking a small part of your capital, but with these funds an investor is still taking only the first baby step away from CD-style safety."

CANADA'S NATURAL RICHES FINALLY START TO PAY

■ Canada, quipped Canadian novelist Margaret Atwood, is where Americans think the weather comes from. But Mother Nature has blessed Canada with more than the occasional cold front. The land is rich with metals, oil, gas, and timber. Like the ground on which it sits, the Toronto Stock Exchange, Canada's largest, is chock full of nature's bounty: One-third of the capitalization of the TSE 300 index comes from companies that extract or process such commodities.

Think of Canada as one big cyclical stock, with the cycle finally turning up. Some of the good news is already out—the long-somnolent TSE jumped 42% in the past 12 months—but commodity watchers argue that this cycle's upswing has years to run. Base metals such as zinc, nickel, and aluminum still sell for less than it costs to get them out of the ground. And at about $15 a barrel, oil is near a five-year low. Says Mark Holowesko, director of research at Templeton Worldwide: "Something's got to give. If you're buying for three to five years, now is the time to get in."

CANADIAN manufacturers got lean during the mean years, laying off workers and otherwise paring costs. Says George Domolky, whose **Fidelity Canada** fund has risen an average 14.2% annually over the past three years: "There's nothing like fear to improve the balance sheet." Domolky is buying metals producers that have cut costs and will benefit from a comeback in commodity prices. Among his favorites: aluminum giant **Alcan**; **Inco**, which supplies one-third of the world's nickel; **Cominco**, which mines for zinc and lead; and **Aur Resources**, a copper play. Says Domolky: "If past cycles are any example, these stocks could double in the next three years." U.S. investors can buy Alcan and Inco on the New York Stock Exchange and Cominco on the Amex.

One-stop commodity shoppers should consider conglomerate **Noranda**, with interests in forests, paper mills, oil, gas, copper, gold, zinc, aluminum, and nickel. Says Fred Sturm, manager of the **Mackenzie Canada** fund (up 14% annually on average over the past three years): "It's the best proxy for all the natural resources in Canada." Sturm expects the stock, recently at $26 (Canadian), to rise 75% to 100% over the next three years as global demand quickens.– **Shelley Neumeier**

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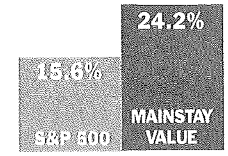
AN INTERVIEW WITH
DENIS LAPLAIGE
manager of
MAINSTAY VALUE FUND

Three-year annual rate of return



PORTFOLIO TALK

SEARCHING FOR VALUE AS THE DOW TOWERS

Is it the French accent? The perfect high-rise view of Central Park in winter, with swirling polka dots of skaters? Denis Laplaige, 43, manager of $4.5 billion in equities at MacKay Shields in New York City, is talking about buying stocks, and there is drama. "When I buy a stock, I must feel pain," says he. "When everyone asks why I bought it, when I go to bed and wonder why myself, then it is probably a good buy. I cannot change my personality, my style." As a value investor, Laplaige is committed to buying unloved stocks, an approach that has served him well as manager of the MainStay Value fund, among others. But how does a pain seeker find buys in a market near its all-time high? He spoke recently with FORTUNE associate editor Susan Kuhn.

What disciplines do you employ?

Every week we screen a large universe of stocks to find the 20% selling at the lowest prices relative to cash flow and earnings. Cash flow is more important than ever because of all the accounting changes that are taking place. With liquid cash, companies can take steps to increase the dividend, buy back stock, pay off debt, or make acquisitions. Then we look for companies with at least three of six catalysts for change: a positive future earnings trend, high dividend yield, an announced stock buyback program, high levels of inside ownership, an announced restructuring, or a private market value that is 50% above the current stock price.

Are you finding stocks that meet the test?

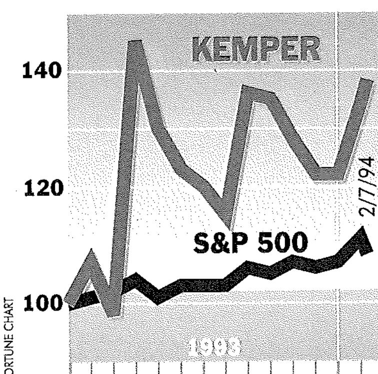
Right now we are in a vacuum. We aren't finding enough cheap stocks to keep us busy. In the past six months there hasn't been a bad group, except for some financial and retailing stocks.

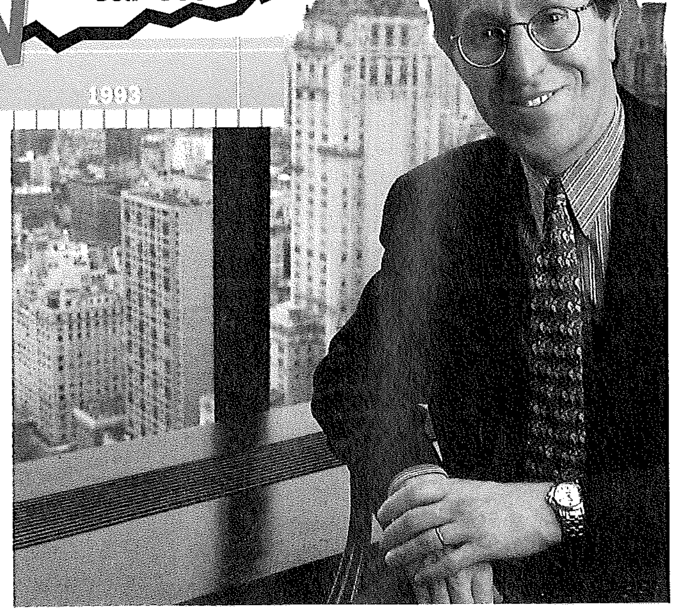
Have you bought financial and retail stocks?

Yes. In finance, we are concentrating on diversified financial services companies, where rising interest rates are not necessarily a bad thing. **Travelers**, with Sandy Weill at the helm, has got consumer finance, brokerage with Smith Barney Shearson, and insurance. I love it. How many times do you see a guy make an acquisition like Travelers and say I want this to make money from day one? The company is buying back stock. My price target on the stock, now $40, is $55 by the end of the year.

Kemper looks to me like Weill's old Primerica. The company sold its property/casualty and reinsurance businesses and has retained its life insurance arm. It also has mutual funds and a big brokerage division whose value isn't being recognized by the market. The management? Well, the company has to do something. It may be a great takeover candidate. I think Travelers would be a natural buyer. The stock is $41 today, and $55 is an easy target.

ONE OF HIS PICKS:
KEMPER STOCK PRICE
INDEX: 12/31/92=100





Laplaige says finding unloved stocks is getting downright difficult.

Are your retail purchases a bet that consumers will spend more?

The consumer *has* come back, just not everywhere. He's picked his priorities, first buying autos and homes. In 1994 we think he will go to the mall or a department store. **Mac Frugal's Bargains Close-outs** is a California discount department store chain. The stock is $16, and we are looking at $20 by year-end.

Or what about Budweiser? **Anheuser-Busch**'s big problem has been worldwide recession, which has slowed sales of beer and snacks. At $48 the stock is selling at 12 times 1994 earnings. I can't remember when a company with great management and a global franchise has been so cheap. Global economies are expanding again. Our price target for this year is $65.

Any favorite industries for 1994?

We like the energy sector, particularly refiners, natural gas, and oil field services. We are underweighting integrated oil companies because those stocks aren't cheap. Stocks like Exxon, with their high yields, behave almost like utilities. Our valuations are based on an oil price of $15 to $16 a barrel. Deep down, if you asked me, I'd say oil will end the year closer to $20 than $12, but if I'm right, that is just fuel for the fire.

Natural gas is a growth commodity—new clean air regulations from the Environmental Protection Agency guarantee growth. Demand is good. Because gas prices were low for a long time, there has not been much drilling, and the U.S. needs to be drilled. That will drive oil field service stocks like **Marine Drilling**, which services drills in the Gulf of Mexico. Marine is a $5 stock that should advance 30% this year.

Other energy stocks we like include **Union Texas Petroleum Holdings**, which explores for and produces oil and gas. The stock is $20 and should rise 25% in 1994. **Mapco** is a conglomerate that has a natural-gas pipeline, a refining arm, and coal. Insiders own 10% of the stock. It sells for $61 a share, and we're looking for $75.

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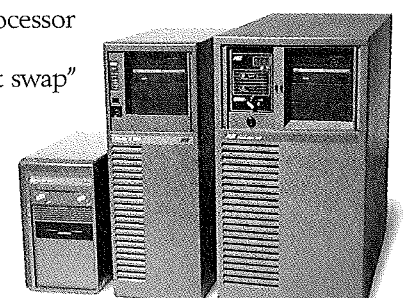

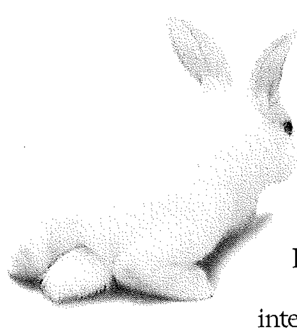

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THE RISK THAT

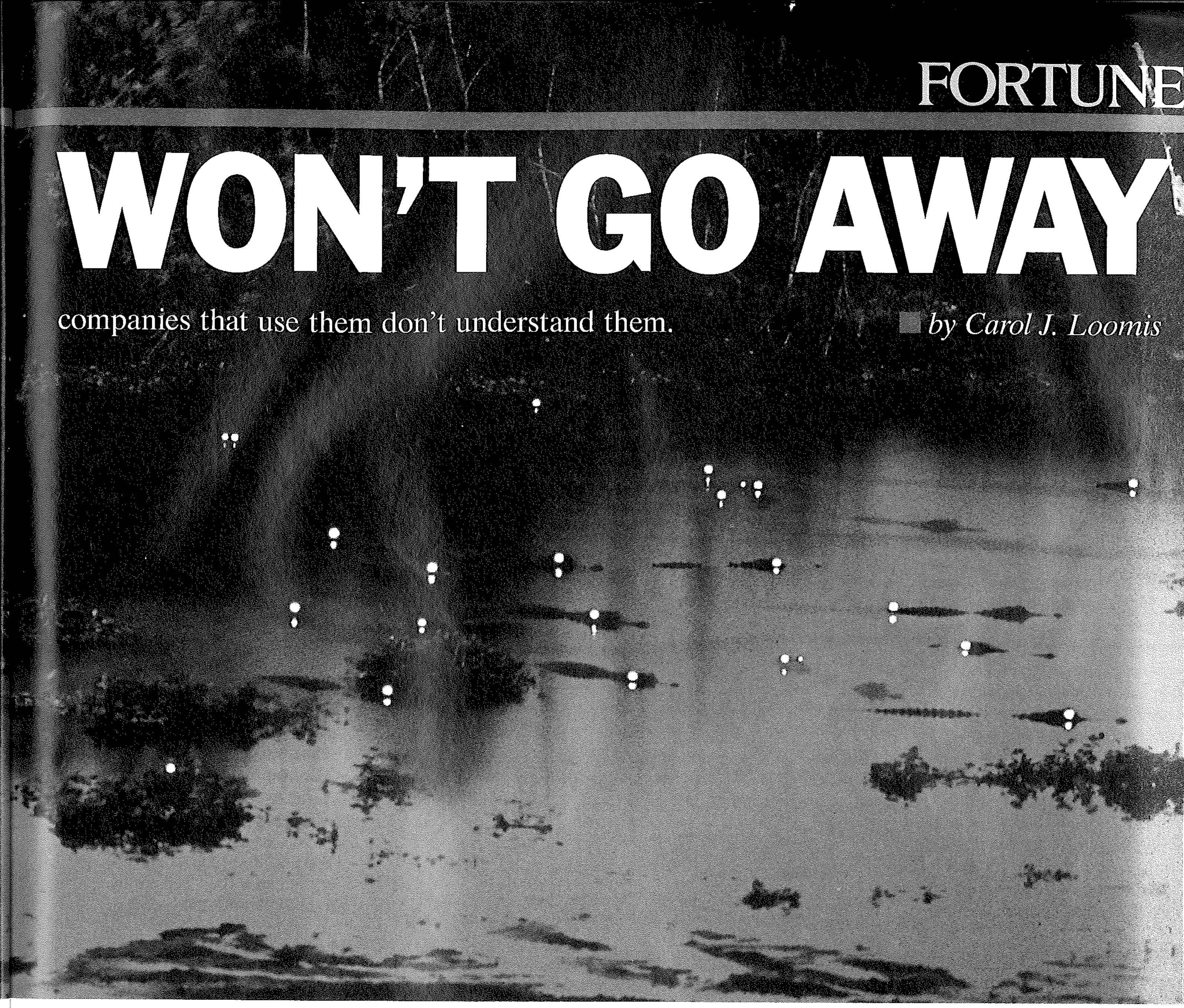
• Like alligators in a swamp, derivatives lurk in the global economy. Even the CEOs of

TO ALL generally well-informed business people, a few words of semicomfort about financial derivatives: First, if you don't really understand what these are, don't fret. Most of your colleagues, top brass included, are equally baffled. Second, if ten years from now—despite periodic booster shots from articles like this one—you still can't keep these things in focus, then cheer! That will mean derivatives have not been forcibly brought to your attention by bad, bad news, in which they make headlines as a villain, or even *the* villain, in some financial crisis that sweeps the world.

That possibility must be entertained because derivatives have grown with stunning speed into an enormous, pervasive, and controversial financial force. Derivatives are contracts whose value is derived—the key word—from the value of some underlying asset, such as currencies, equities, or commodities; from an indicator like interest rates; or from a stock-market or other index. The derivative instruments that result—variously called swaps, forwards, futures, puts, calls, swaptions, caps, floors, collars, captions, floortions, spreadtions, look-backs, and other neverland names—keep bursting into the news, as they did recently when the Federal Reserve raised interest rates and share prices sank, costing some traders of derivatives huge amounts that in some cases surely ran into many millions. Derivative contracts also produce amazing statistics: growth rates, for example, of 40% a year. "These things," says one Wall Streeter, "are metastasizing." They demand superlatives, are measured in trillions of dollars, are quintessentially global, and are positioned on what wags call "the bleeding edge of technology."

Derivatives are fixtures by now in thousands of corporations, but you need a playbill to figure out the cast. The lead actors, small in number, are derivatives dealers: the big commercial banks, the major securities firms, plus an occasional outlander from insurance. For these players, derivatives have become an imposing source of profits, earned largely on the fastest-growing, most controversial instruments of all: customized, over-the-counter contracts written between a dealer and another party. A Citicorp executive goes so far as to call derivatives "the basic banking business of the 1990s."

The remaining roles in derivatives are played by the end users, who include the dealers themselves and just about anybody else capable of taking the other side of those contracts—smaller banks, industrial companies, insurers and other financial services



WON'T GO AWAY

companies that use them don't understand them. ■ by Carol J. Loomis

firms, pension funds, governmental units such as municipalities. These "counterparties" to the contracts customarily use them to hedge some business risk they don't want to bear, such as a jump in interest rates or a fall in the value of a currency.

But transferring such a risk doesn't wipe it away. The risk simply gets passed by the initial contract to a dealer, who in turn may hedge it by a separate contract with still another dealer, who for his part may haul in yet another dealer or maybe a speculator who *wants* the risk. In the words of Rodgers and Hammerstein's King of Siam: "et cetera, et cetera, et cetera." What results is a tightly wound market of many, many interconnections—*global* interconnections—that is altogether quite different from anything that has ever existed before.

Most chillingly, derivatives hold the possibility of systemic risk—the danger that these contracts might directly or indirectly cause some localized or particularized trouble in the financial markets to spread uncontrollably. An imaginable scenario is some deep crisis at a major dealer that would cause it to default on its contracts and be the instigator of a chain reaction bringing down other institutions and sending paroxysms of fear through a financial market that lives on the expectation of prompt payments. Inevitably, that would put deposit-insurance funds, and the taxpayers behind them, at risk.

This threat, even if judged remote, is part of the conundrum that derivatives pose for regulators. Every regulatory speech on derivatives takes a bow to their hedging "benefits." Less publicly, regulators pay their respects to derivative profits, a blessed relief from the banks' troubled loans to less-developed countries, highly leveraged companies, and real estate swingers. For U.S. regulators, an added satisfaction is knowing that American commercial banks are the worldwide leaders in this business.

Yet these things are regulatory nightmares. They are "off balance-sheet" instruments whose mere existence, leaving aside their complexities, obscures what's going on at the store. They make leverage all too easy to come by. Concocted in unstoppable variation by rocket scientists who rattle on about delta, gamma, rho, theta, and vega, they make total hash out of existing accounting rules and even laws. Tellingly, the laws of many countries have considered some derivative contracts to be gambling bets, in the sense that the outcome of the transaction is not under the control of either party to it.

Derivatives have the aspect of a big, raw-

boned teenager of tremendous strength who has grown up in a household that had neither the time nor the skill to formulate rules for his behavior and that now senses he just might be capable of gross misconduct. You can't exactly manhandle a kid like that. For one thing, he might pick up his marbles and set up shop in some well-furnished telephone booth overseas. So regulators have circled derivatives uneasily, not sure of what to do about them, except to worry.

The new worriers include Congressman James A. Leach, 51, of Iowa, who calls derivatives the "wild card" in international finance. The ranking Republican on the House Banking Committee, Leach has just introduced a bill that proposes a new Federal Derivatives Commission, whose authority over these products would be extensive.

The old worriers include Gerald Corrigan, 52, who was until recently president of the Federal Reserve Bank of New York and who has just become a top-level international executive at Goldman Sachs, itself a large derivatives dealer. Two years ago the formidable Corrigan—given to mumbling, but not on this occasion—set off an industry commotion by sternly asking a ballroom of bankers whether derivatives might not be introducing new elements of risk and distortion into the financial system. To bank managements, he said, "I hope this sounds like a warning, because it is."

This January, talking to FORTUNE, Corrigan praised the steps that major financial institutions have since taken internally to tighten their risk-management systems—the controls of this business. He commended the work of the Washington think tank called the Group of 30, which last year asked dealers and end users to strengthen their controls further. And he made the customary salaam to the "benefits" of derivatives, presenting a case that the vast array of hedges set up in the world has reduced the possibility of financial crises.

Nonetheless, Corrigan said he probably would do no more today than slightly tone down his warning of two years ago. There's that growth to worry about, he said, and a string of risks. Included in his recital of these was the thought that some shock—as extraneous even as a coup in Russia or a natural disaster—might indeed cause what he calls "payment gridlock" in the market.

Regulators can handle almost any problem, Corrigan said, if they can wall off a troubled financial institution from the rest of the world. Derivatives, because of all their interconnections, have made that job tougher. Moreover, the interconnections frequently lead to securities firms and other nonbanks, to which government safety nets might have to be extended if the banking establishment is to be protected. Without precisely conceding that point, Corrigan says that "for these purposes, the distinction between banks and nonbanks is hardly relevant. If something bad happens, everybody's just got to do the right thing."

The big dealers seem inconsistent on the subject of deep trouble. When they have talked to regulators who have subsequently reported their comments in official studies, some dealers have expressed concern about systemic risk. They have focused, in particular, on the buildup of linkages in the business and the speed with which reports of trouble whip through the market and affect prices.

Publicly, most dealers claim the talk of a meltdown to be greatly overblown, partly because they believe each institution in this business to be diligently doing the right thing by intensely monitoring its own risks. Says Mark Brickell, one of J.P. Morgan's derivatives experts: "It's in our own self-interest to make sure that no big problems develop." That is certainly true: A derivatives disaster would not only crumple the dealers' bottom lines but assuredly bring on new regulation the industry would detest. Consequently, as Corrigan indicates, many dealers have worked incessantly to perfect their risk-management systems, have sprung for the high-tech equipment that makes the systems possible, and have worked for laws that will distinguish derivatives from Lotto.

Unfortunately, the very need for these efforts impresses on an outsider just how much risk there is to be contained and how difficult the job is. And history is not entirely reassuring. In the 1987 stock market crash, according to the conclusions of the official Brady report, colossal sales of stock index futures by so-called portfolio insurers—whose investment strategies depended entirely on these derivatives—greatly exacerbated the 500-point market decline. On the other hand, when two derivatives dealers, Bank of New England and Drexel Burnham, later failed, the damage was successfully walled off.

But in "notional value," which means principal and is the flawed but standard way by which a derivatives business is measured, these companies were also-rans. Each had only about $30 billion of contracts outstanding when the guillotine fell. The derivatives industry has not been tested by a giant failure, as it would have been, for example, if the serious

HOW TO TALK LIKE A TRADER

- **FORWARD:** A contract obligating one party to buy, and the other to sell, a specific asset for a fixed price at a future date.
- **FUTURE:** A forward contract traded on an exchange.
- **SWAP:** An agreement by two parties to exchange a series of cash flows in the future, as, for example, fixed interest rate payments for floating-rate payments.
- **CALL:** An option giving the holder the right, but not the obligation, to buy a specific quantity of an asset for a fixed price during a specific period.
- **PUT:** An option giving the holder the right, but not the obligation, to sell a specific quantity of an asset for a fixed price during a specific period.
- **UNDERLYING:** The asset, reference rate, or index whose price movement determines the value of the derivative.
- **CAP:** A contract that protects the holder from a rise in interest rates or some other underlying beyond a certain point.
- **FLOOR:** A contract that protects the holder against a decline in prices below a certain point.
- **SWAPTION:** An option giving the holder the right to enter into or cancel a swap at a future date.
- **DELTA:** The rate at which the price of an option changes in response to a move in the price of the underlying. If an option's delta is 0.5 (out of a maximum of 1), a $2 move in the price of the underlying will produce a $1 move in the option.
- **GAMMA:** The rate at which delta moves up or down in response to changes in the price of the underlying.
- **RHO:** The rate at which the price of an option changes in response to a given move in interest rates.
- **THETA:** The rate at which the price of an option changes because of the passage of time. Also known as "time decay."
- **VEGA:** The rate at which the price of an option changes because of a change in the volatility of the underlying.

liquidity problems affecting Salomon Brothers at the time of its Treasury bond scandal in 1991 had pushed that firm over the edge. Salomon had more than $600 billion in derivative contracts on its books. Even so, it is itself an also-ran in derivatives. Chemical Bank, the world's titular leader, is up to about $2.5 *trillion*. Fact is, nobody knows how this powerful, interlocked business—this genie out of a bottle, as everybody calls it—would come through a really severe crisis.

Here's how derivatives derive their value—and their risk. Say you don't buy General Electric stock, but instead buy a call on GE, an option entitling you to buy GE for a specified time at a specified price. From then on the value of your call—your derivative—is going to be determined by what happens to the price of GE stock, which in trading lingo is known as "the underlying." The cost of the call, or the premium, will be relatively small and give you great leverage if the stock does well. But if the stock loafs or falls, the call could be worthless.

THEO WESTENBERGER

Two years after his foghorn blast to bankers about the risks of derivatives, Gerald Corrigan is still worried.

OPTIONS, such as that call, are one of the two basic kinds of derivatives. The other is forwards, which can be illustrated in terms of a U.S. company planning to build a French plant, for which it expects to need $20 million in French francs six months from now. Wanting to nail down its cost today—wanting, in other words, to hedge against a rise in the price of francs—the company promptly contracts with a bank to buy $20 million in francs six months forward at a price negotiated now.

That contract will turn out to have been good value for the company if the franc thereafter jumps in price, but will be a loser if the franc's price falls. Whatever the company makes on the contract, the bank will lose—and vice versa. The mathematics work out that way because derivatives are a zero-sum game. On the other hand, you can argue that the certainty of knowing what its francs will cost provides the company with a gain not mathematically measurable.

The meat and potatoes of the derivatives business is a kind of forward contract called a swap, which we will explain by momentarily benching the dealer community. Instead, imagine two homeowners, each holding a mortgage not entirely to his satisfaction. Joe's mortgage, whose principal value is $100,000, has a fixed 8% rate. Chuck's mortgage, also $100,000, has a floating rate, tied to Treasury bills and currently costing him 8% as well. But Chuck worries that interest rates are going to go up. Joe thinks they could go down.

So they "swap" their interest positions (that is, swap floating for fixed), agreeing to settle up between themselves every quarter, depending on what interest rates have done in the meantime. In effect, the deal sets up a series of forward contracts, each covering a quarter. Chuck must pay money to Joe if interest rates go down, and Joe must pay off if they go up. Even if Chuck emerges the loser, he has eased his mind by putting a cap of 8% on the interest rate he will have to pay.

Of course, Joe and Chuck have each acquired a new concern: For the duration of this deal, which could be years, will the guy on the other side of the contract be good for whatever he turns out to owe, if anything? This is credit risk, and it is a central issue for the dealers and end users who enter into contracts. The character of securities firms, normally short-term transactors, is actually being transformed by derivatives, which put them for the first time into the business of extending long-term credit. That means they are beginning to look more like commercial banks, which, of course, assume credit risk every time they make a loan. But loans are for a finite amount. What's owed on a derivative expands and contracts as market prices move. In the Joe/Chuck example, volatility in interest rates could cause one side to end up owing the other a bundle.

In that deal also, the $100,000—that's the notional value—serves only as the reference amount against which the interest rates are figured. But notionals are just about the only way to measure the size of the derivatives business. So notional values go into the adding machine and out comes trillions. Counting everything, including both derivatives traded on the futures and options exchanges and over-the-counter (OTC) derivatives, the notional value of derivative contracts outstanding is today an estimated $16 trillion. That leaves the GDP of the U.S., at around $6.4 trillion, in the dust.

Multinational companies have been entering into currency contracts for many decades, and futures and options trading on exchanges has been hot stuff for more than ten years. But what have really been burning up the track are OTC derivatives, the tailor-made contracts whose dazzling growth began in the mid-1980s and which are now up to an estimated $10 trillion in notional value. These are the derivatives that are making the business so complex and difficult for regulators to get their arms around.

The derivatives portfolio of a given OTC dealer—its book—still includes many plain-vanilla swaps, in which the bank and an end user will have exchanged floating for fixed and be dealing entirely in U.S. dollars. But these players are way beyond that point in many contracts and, like the spacecraft *Galileo*, are still heading for Jupiter.

Asked recently to give an example of a complicated swap, Peter Hancock, head of derivatives at J.P. Morgan, edged into the language of trading: "It would be something," he said, "in which you get beyond binary risk and into a combination of risks, such as interest rates

REPORTER ASSOCIATE *Erick Schonfeld*

and currencies. Or take an oil company, which has risks of oil prices dropping and interest rates rising. To hedge, it could buy an oil price floor and an interest rate cap." But maybe, said Hancock, the company would like something a little cheaper: "In that case, we could do a contract that would pay out only if oil prices are low and interest rates are high at the same time."

Hancock then moved closer to Jupiter. He postulated the case of a German bank whose loans have been made almost entirely to German companies and a Texas bank whose loans are almost totally Texan. "What you'd like to do," he said, "is figure out a way they can diversify by swapping exposures, with the German bank taking over some of the Texas risk and vice versa." And what's preventing this kind of deal from happening? Says Hancock: "Well, what you lack are good underlyings, which would be an index of credit losses in Texas and another for Germany. Those kinds of indices are in their infancy."

Eugene H. Rotberg, a Washington lawyer who has held high-level jobs at the World Bank, the Securities and Exchange Commission, and Merrill Lynch, illustrates how convoluted the business has become for dealers by quoting a descriptive passage from *Risk*, a British magazine: " 'On the risk-management side the bank runs five separate books: a spread book, a volatility book, a basis book, a yield-curve book, and a directional book. The spread book trades swap spreads using Treasuries to hedge medium- to long-dated swaps and a combination of futures and Treasuries for the short term. The volatility book makes markets in caps, floors, and swaptions as well as captions, floortions, and spreadtions. The basis book deals with the spread between different floating-rate indices, such as prime and commercial paper vs. LIBOR. The last two books are structured to arbitrage changes in the steepness of the curve as well as overall movements in interest rates.'

"I doubt," adds Rotberg, "that the CEO of that bank was equipped to supervise that operation."

BIG BOYS IN A BIG BUSINESS

■ Lists of the largest dealers in swaps or other species of derivatives are common. But to FORTUNE's knowledge, this is the first that totals all the derivatives contracts of each dealer and presents a worldwide ranking by "notional" values (that is, principal amount). Even so, the list may not be comprehensive: German banks and most Japanese banks (other than Mitsubishi, No. 8) disclose no data about derivatives. Nor could we get up-to-date information in all cases, which is why the reporting date for each dealer is noted.

Banks are much bigger forces in this business than securities firms. Chemical, not usually thought of as a derivatives powerhouse, heads the list partly because it is a leader in short-term contracts done with other banks. Bankers Trust and J.P. Morgan have the big reputations overall in this business, and Citicorp is known for currency contracts. Among international dealers, the Swiss banks and the French—Crédit Lyonnais, Indosuez, Société Générale, and Paribas—are particularly prominent. The biggest securities firm on our list is Salomon, which ranks 12th.

The worldwide total of derivative contracts is estimated to be about $16 trillion. But the figures in this list exceed that amount because of double counting. If Chemical enters into a contract with Bankers Trust, the contract's notional amount shows up in the total of each bank. But when industry figures are compiled by trade associations and regulators, this double counting is eliminated because the data assemblers have access to the information needed to do that.

FORTUNE TABLE

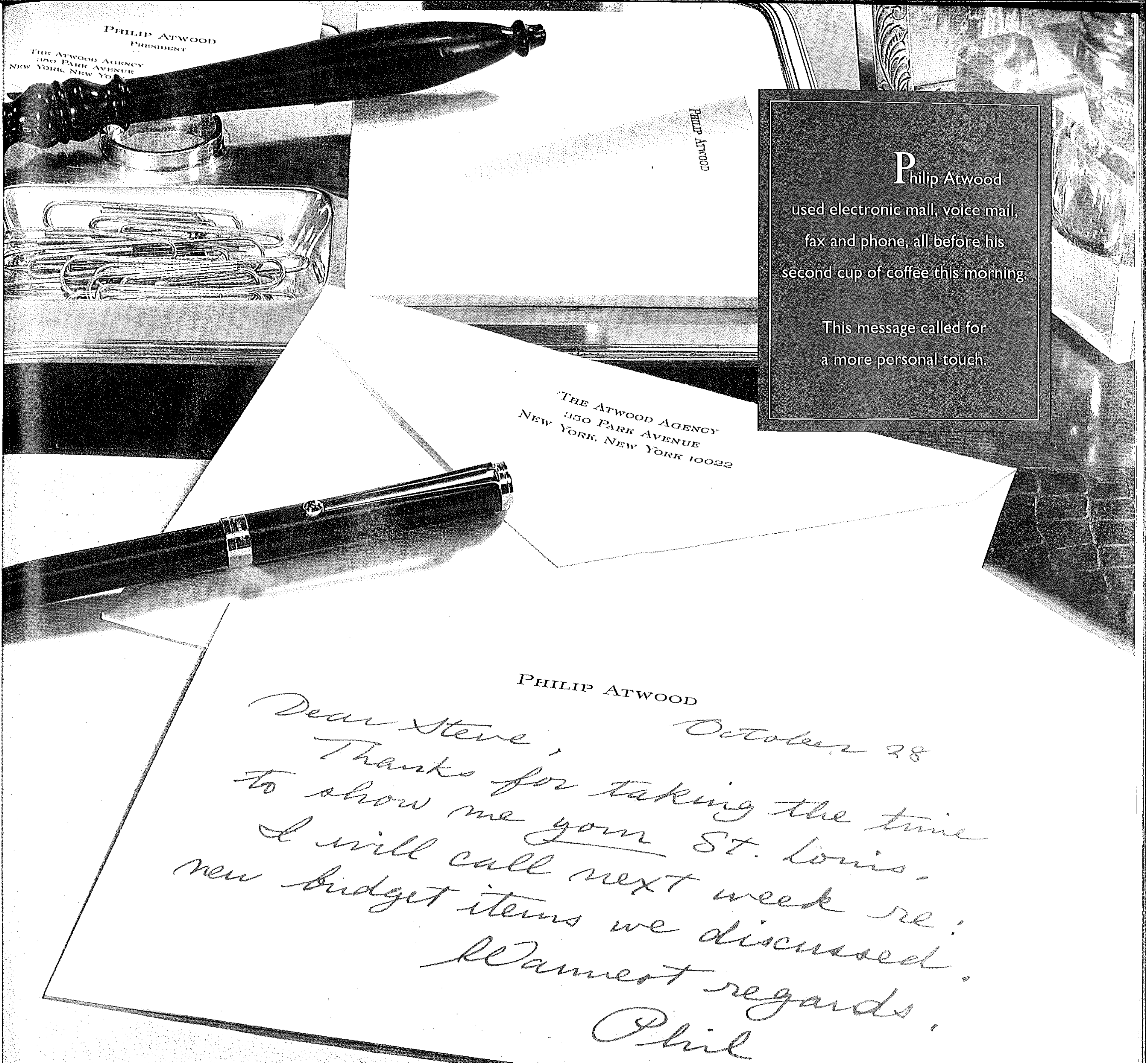
	DEALER	NOTIONAL VALUE Billions of 1993 dollars
1	Chemical Bank	$2,416[4]
2	Bankers Trust	$1,982[4]
3	Citicorp	$1,981[4]
4	J.P. Morgan	$1,660[4]
5	Union Bank of Switzerland	$1,452[3]
6	Swiss Bank	$1,352[3]
7	Société Générale	$1,209[3]
8	Mitsubishi Bank	$1,182[2]
9	Crédit Lyonnais	$1,110[3]
10	Chase Manhattan	$1,042[4]
11	Crédit Suisse	$1,017[3]
12	Salomon	$967[3]
13	BankAmerica	$964[4]
14	Banque Indosuez	$945[4]
15	Merrill Lynch	$918[4]
16	Goldman Sachs	$752[1]
17	Barclays	$751[1]
18	Paribas	$742[1]
19	National Westminster	$577[1]
20	Royal Bank of Canada	$554[5]

[1]12/31/92. [2]3/31/93. [3]6/30/93. [4]9/30/93. [5]10/31/93.

YET REGULATORS are adamantly insisting these days that CEOs, and their boards, *do* understand what is going on in the derivatives operations beneath them. The Office of the Comptroller of the Currency issued 26 pages of guidelines last October as to how national banks should manage the risks of their derivatives business and specifically mentioned more than a dozen times how responsibilities for these fall on the banks' boards. This warning is no more than a reprise of past efforts by regulators to make directors understand they're on the line for the deeds of their banks. But comprehending derivatives may be the ultimate burden for a director. Says Michael M. Wiseman, a banking partner at New York law firm Sullivan & Cromwell: "It's just one more reason why no one in his right mind wants to be on a bank board."

As for CEOs, they obviously vary in coping ability. At one end of the range would be Charles Sanford, of Bankers Trust, and Dennis Weatherstone, of J.P. Morgan, both experts because they came up through trading. Close to the other end would be the CEO of a large U.S. regional bank, both a dealer and end user of derivatives, who recently begged off answering a fairly rudimentary question about his bank's derivatives portfolio. Said he: "I am rapidly sinking over my head."

It is certain that this floundering CEO could not have learned much about his bank's derivatives portfolio by consulting his own annual report. Disclosure is abysmal in U.S. annual reports and virtually nonexistent in countries like Japan and Germany. The conventional holding pen for derivatives in the U.S. is a footnote to the financial statements called "off-balance-sheet financial instru-


PHILIP ATWOOD
PRESIDENT
THE ATWOOD AGENCY
350 PARK AVENUE
PHILIP ATWOOD
Philip Atwood used electronic mail, voice mail, fax and phone, all before his second cup of coffee this morning.
This message called for a more personal touch.
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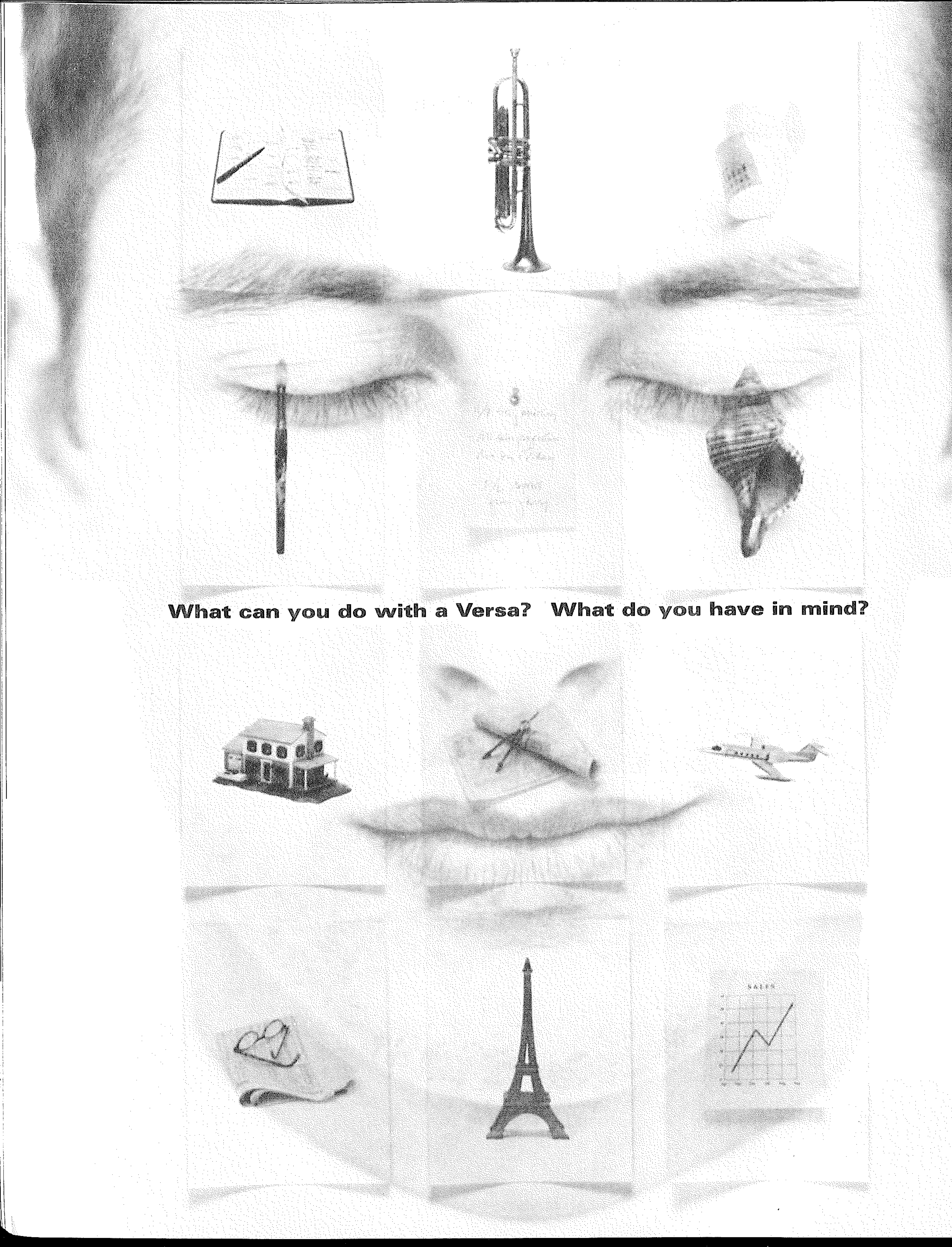
350 PARK AVENUE
NEW YORK, NEW YORK 10022
PHILIP ATWOOD
Dear Steve, October 28
Thanks for taking the time to show me your St. Louis. I will call next week re: new budget items we discussed.
Warmest regards,
Phil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SALES

ments." It is usually densely packed but uncommunicative. Although companies could clearly do better, the difficulty of explaining a derivatives operation is profound.

THE POINT has been driven home recently by the painful and peculiar odyssey of Banc One, eighth-largest U.S. banking company, avaricious acquirer, and—*normally*—stock market star. Banc One, strictly an end user of derivatives to hedge business risk, not a dealer, spent last year trying to explain to the world what it was doing with swaps, and just why these things were contributing so much to profits. Out of $1.2 billion in pretax profits in 1992, swaps contributed an extraordinary $318 million.

But only an experienced bank analyst could have understood what Banc One had to say about this phenomenon, and some of them disliked this high-tech faucet spewing out profits. In April, Banc One's stock began to drift down, which is woe for this company that constantly uses its shares to acquire other banks. Still later, the SEC began to put pressure on Banc One to improve its disclosure about derivatives. So in its third-quarter 10-Q report filed with the commission, the company had an elaborate new page of explanation.

Peter Lincoln, an investment vice president of United States Steel and Carnegie Pension Fund, which owns about $50 million of Banc One stock, has had 33 years of Wall Street experience. But he says he gained very little from the 10-Q explanation. By that time, though, Banc One was dispatching its cavalry. In early December a large delegation, headed by CEO John B. McCoy, held meetings in New York and Boston for analysts and the press to discuss this one subject. Lincoln, among the 260 or so who packed the New York gathering, said it did the job. "Of course," he added, "it took from 9 o'clock to 3 o'clock."

The brief explanation is this: Traditionally, banks have met a slump in loan demand by moving their spare cash into investments. Since these provide lower profit margins than loans, banks have also often leveraged themselves up during such periods, borrowing so that they could build the size of their investment portfolios and thus keep earnings up during the slow spell for loans.

Banc One's strategy in the past few years has instead been mainly to do swaps in which the bank receives fixed interest rates and pays floating rates. The notional amounts of the swaps are very large: $23 billion as of last September, onto which Banc One had then piled $15 billion worth of various other derivatives, for a total of $38 billion. The bank chose to "receive fixed and pay floating" because it expected rates to go down. This "bet"—a word used by Banc One at the meeting—worked, which means the company was the winner in its zero-sum swaps with the dealers.

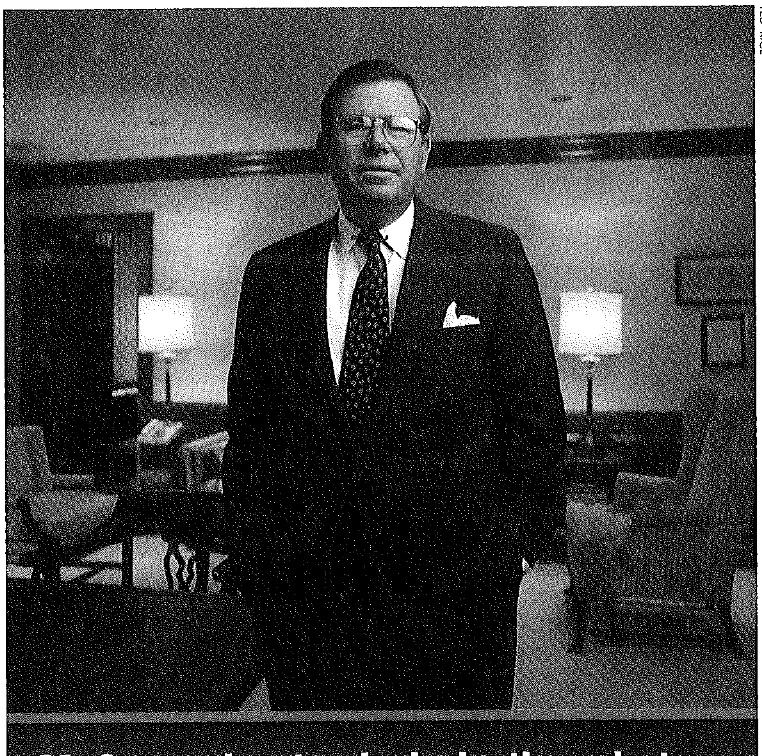
Along the way, Banc One leveraged itself up without its showing. A swap contract obviously has risks. But when a contract is born, absolutely nothing goes on the balance sheet of either counterparty. Only thereafter, as the swap creates receivables and payables, does anything move onto the balance sheet. In contrast, had Banc One borrowed and bought securities, as banks traditionally have done, the balance sheet immediately would have expanded. The bank's "leverage ratio"—the relationship of its equity capital to its assets—would consequently have fallen, a result regulators don't care for.

In effect, Banc One has created a synthetic bank that does swaps and that helps the *real* bank through slow periods. Investors could see that as the latest example of the adept management for which Banc One is renowned. Or they could see it as financial engineering that doesn't have much to do with banking. Why couldn't, say, Toys "R" Us do the same thing in a slump? Or Merck, now that times are tough? These questions suggest why some bank analysts are still not happy with the quality of Banc One's earnings. The stock was recently down about 25% from its high last April.

The trick for an end user of derivatives is plainly to be on the right side of the bet. "This is an art," says Richard D. Lodge, the Banc One executive who runs the synthetic bank. Another master on this canvas: speculator and hedge fund operator George Soros, who in the fall of 1992, when many European currencies crumbled in value, made a reported $1 billion by using currency derivatives and other tools to short the market. Alas, the government of Malaysia went long about the same time, and lost nearly four times that much—that's right, almost $4 billion.

Currently the *cause célèbre* in the wrongheaded department is Metallgesellschaft, a metals, mining, and industrial company whose $15 billion in sales make it Germany's 14th-largest industrial corporation. For its 1993 fiscal year, ended last September, the company reported a preliminary loss of about $200 million. But that was before calamitous news spurted from one of Metallgesellschaft's 251 subsidiaries, MG Corp., a U.S. marketing organization and part owner of a U.S. oil refiner. The subsidiary had been playing in derivatives, where it has so far reported nearly $500 million in losses and may lose perhaps another $800 million.

MG took a couple of years to dig its hole. In Part 1 of this affair, it entered into long-term, fixed-price contracts (which are not derivatives) to supply oil products to gasoline



TED RICE

McCoy understands derivatives, but he's had big trouble educating the shareholders of Banc One about them.

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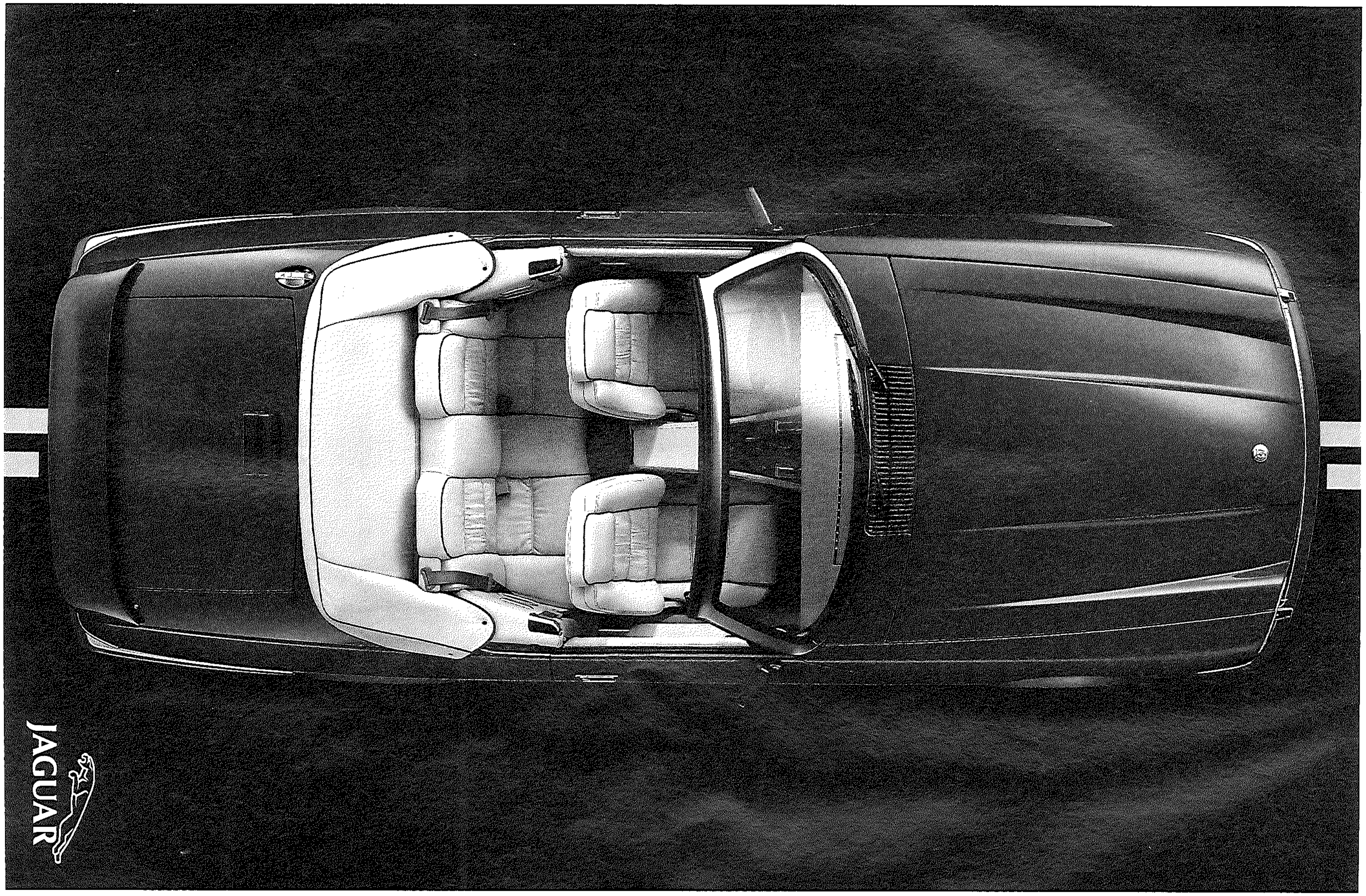

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stations and other users. In Part 2, it negotiated other long-term contracts to buy oil, so that it would have product to deliver against Part 1's contracts. But for whatever reason, it did not line up 100% of its requirements. So it was left bare on some of its supply agreements, a situation exposing it to fluctuations in the price of oil.

In Part 3, therefore, it put on a pseudo-hedge, employing tons of leverage, buying quantities of oil derivative contracts on the futures exchanges and from OTC dealers. The idea was that rising oil prices, if these came, would boost the value of the derivatives, creating profits to offset losses MG would then realize from having to buy high-priced oil to satisfy its long-term contracts. The fatal defect in this plan was that the derivative contracts were short term and not a true hedge against the long-term supply contracts. In trading terms, MG had a hedging "mismatch," in which it was vulnerable to a widening of the spread between the long- and short-term prices of oil. The mismatch turned this supposed end user into a speculator on the oil spread.

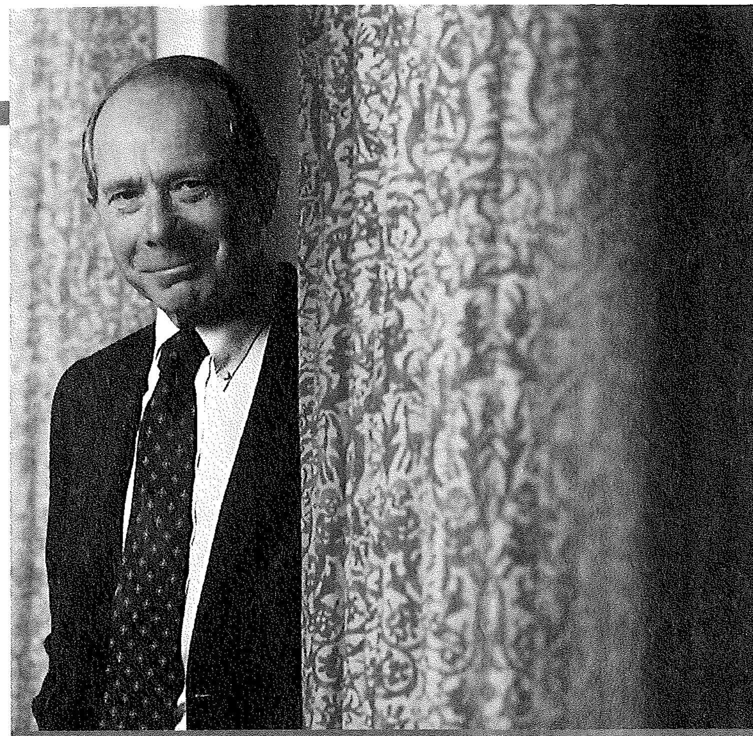
Whereupon the spread *did* widen, by means of a collapse in the short-term price last fall. MG's derivatives turned into dreadful losers. In December, as the truth began to emerge, Metallgesellschaft's flamboyant CEO, Heinz Schimmelbusch, 49, was fired. He is now under criminal investigation for fraud and breach of trust. (Schimmelbusch's only comment: "I always informed the supervisory board to the best of my knowledge, based on the information available to me at the time.")

Two banks that are both owners and creditors of the company, Deutsche Bank and Dresdner Bank, then muscled the other creditors into what is being called the "biggest rescue operation since Dunkirk." Altogether, Metallgesellschaft's creditors, most of whom were shocked to find they'd been lending to an energy derivatives speculator, are putting in a colossal $2 billion. In addition, divisions of the company will be sold and about 7,500 out of 46,000 employees will lose their jobs. So it goes with the benefits of derivatives.

If end users sometimes get boiled in oil or other trading hot tubs, the big dealers seem to paddle along extremely well. True, some of the evidence is circumstantial. Many dealers are mum about the dollars coming in from derivatives. They bury these instead in trading and foreign exchange revenues, which are profits before compensation, operating expenses, and taxes. These businesses have boomed. Figures compiled by the Wall Street firm of Keefe Bruyette & Woods show that trading revenues (including foreign exchange) of the seven biggest U.S. banks grew more than five times as fast over the past five years as all other revenues. And derivatives are plainly a big reason.

Disclosures from a couple of major banks have provided proof. Reporting 1992's figures, for example, J.P. Morgan separated out several kinds of derivatives, including swaps and forward currency contracts, and said these contributed $512 million, or about 53%, of total trading revenues, which were $959 million. Then, late last year, Chemical Bank went all the way, stating its derivatives revenues straight out. For the first nine months of 1993, these were $236 million, a huge 53% jump from the $154 million gleaned in 1992, and about 30% of Chemical's total trading revenues.

It could be bad for the banks to offer greater detail about derivatives. Analysts consider trading revenues to be uncertain income, and the growth of these has on its own definitely



THEO WESTENBERGER

AIG had a freewheeling derivatives operation until Greenberg moved in to take back control and curb the risk.

depressed price/earnings multiples. Though it is the top bank in FORTUNE's list of most admired companies, Morgan was recently selling for only eight times 1993 earnings. Bankers Trust, which has made itself a virtual derivatives department store, had a basement-level multiple of only six times earnings.

Investors are just not comfortable with the risks they perceive in derivatives. One is deadbeats—otherwise known as credit risk. Yes, every dealer worth the name carefully polices the credit quality of its counterparties and sets limits on how much business it will do with each. But within the span of a five- or ten-year derivative contract, a counterparty's creditworthiness can deteriorate substantially. When Olympia & York, the Canadian real estate giant, tumbled into deep distress, the detritus included a good many derivative contracts—some since settled in bankruptcy proceedings for 15 cents on the dollar.

Perhaps the most problematic credit risks around today are hedge funds, the big pools of investment capital like George Soros's Quantum Fund. Many have moved aggressively into derivatives, making themselves such important customers that no dealer wants to turn them away. But their creditworthiness is suspect because the funds' investors typically have the right to withdraw their money every three months. So a fund could suddenly shrink into counterparty nothingness. A dealer can partially protect itself by trying to get collateral for what a fund owes it, as Salomon told a group of analysts recently that it tries to do. But can a dealer get a line on how deeply extended that fund may be with other dealers? "No," said Salomon's treasurer, John G. Macfarlane. "That is quite difficult to do."

ANOTHER HAZARD that dealers face is market risk, which is the prospect that prices will take off in a direction that leaves them losers on unhedged positions (à la Metallgesellschaft). Some of these positions will have been accumulated deliberately in the name of "proprietary trading," in which

dealers use their brainpower, technology, and feel for the market to make money for their own firm. In other cases, hedges may be difficult to put on, or a dealer may think it has a hedge and finds it doesn't. Says Gene Rotberg, the Washington lawyer: "The only perfect hedge is in a Japanese garden."

For various complex reasons, options are the most difficult derivatives to hedge. They are also the fastest-growing segment of the business, partly because institutional investors have been looking for ways to insure themselves against a drop in the stock market. So they have been buying puts from the dealers, which allow investors to unload stock on the dealers at agreed-upon prices if the market begins to collapse. Dealers—the writers of these puts—are potentially in the same hot seat that many speculators and other unfortunates occupied when the stock market "gapped"—that is, dropped chaotically—in October 1987. A goodly number of these folk, forced to buy the stock put to them, foundered as the market kept falling.

Says the risk manager at one dealer: "You have to do some of this stuff in options because of customer demand. Nobody wants to write a lot of these things because the risk profile is horrible. You end up making a tiny bit of money, or you lose a gigantic amount." Can't he hedge his positions? "Yes, to an extent. But you are always vulnerable to a gap move. You just can't hedge it." What you can do as a dealer is constantly run "stress simulations" that test the ability of your establishment to withstand shocks that are, say, 6.6 on the Richter scale or higher. These simulations are a staple of the dealer community, and it is only to be hoped they work better than the ones that tested the strength of the Los Angeles freeways.

IN ADDITION to credit and market risks, dealers must contend with valuation risk, which addresses the possibility that the profits of a transaction may be misstated. The good thing about a dealer's derivatives portfolio is that it is marked to market. The bad thing is that judgments about what the "market" is can vary widely. That is true even on short-term derivatives, which are readily priced because they trade in a liquid market. Calculating their results, derivatives traders, who are typically paid based on how much they make for their employer, will want to "up-front" all the profits they can. Employers, conversely, will think it prudent to delay the recognition of part of the profits by setting up reserves for credit risk, maintenance costs, and potential losses should they need to bail out of a position in a rough market. The ingredients are present for a tug of war.

The valuation difficulties are just that much tougher if the derivative in question is long term and exotic. The heart of the problem is that many derivatives are originally priced, and subsequently valued, by mathematical models that must include an estimate of what the volatility of the underlying will be over the term of the contract. Volatility, known to the trade as vega, can be measured in different ways. A model builder would probably consult history for guidance, looking perhaps at the annual percentage difference between a stock's high and low. But how much history do you examine? The past six years of the Standard & Poor's 500-stock in-

dex would give you one picture of volatility. Add in 1987, with its crash, and volatility would go into overdrive.

However you look at volatility, your assumptions can change during the term of a contract, with effects on profits that are powerful. A drop in volatility raises profits—and here is your trader, your expert, telling you that, happily, volatility has indeed gone down. The system shrieks for checks and balances, which all good dealers have. Internally, they will probably have "independents" who check the assumptions of the traders. Outside accountants, who are climbing the learning curve in this business, will also keep an eye on the traders' valuations. Robert Herz, a partner of Coopers & Lybrand, says that his firm often asks academics or consultants to value certain of a client's derivatives, to make sure the client's figures are defensible.

What can happen when a trader has the whip hand over valuations is suggested by some fresh details about the big, widely publicized fight last year between American International Group, the big insurer, and its former derivatives boss, Howard Sosin, 43. Sosin moved to AIG from Drexel Burnham in 1987 and became the 20% owner of a new joint venture, AIG Financial Products (called FP), which specialized in long-term derivative contracts that many of its competitors wouldn't touch. Sosin supplied the expertise; AIG, an AAA-rated company, provided the creditworthiness demanded by customers entering into FP's stretched-out deals. Though FP never grew to more than 135 employees, it became a huge provider of profits both to Sosin and to AIG.

Sosin, however, was a control freak who wanted no interference from AIG. The company's tough, commanding CEO, Maurice "Hank" Greenberg, 68, could take that only so long. AIG's 1992 annual report disclosed that Sosin would be leaving, and at the company's annual meeting in April, Greenberg put the blame on "a difference of opinion." He thought stronger risk management and credit controls were needed, he said, and Sosin didn't agree.

Hedge fund investors can withdraw their money every three months. So a fund could suddenly shrink into counterparty nothingness.

Taking 25 FP employees with him, Sosin went off to look for a new AAA backer. Figures that he circulated to prospects showed that FP had a "distributable profit" in 1992 of $340 million. That was eye-catching because AIG had reported *its* share of FP's 1992 profits at $171 million. Assuming that AIG had 80% of the profits as it did 80% of the ownership, total profits should have been about $210 million. The difference between that figure and $340 million of "distributable profit" is large.

Offering an explanation to FORTUNE, Edward E. Matthews, AIG's vice chairman for finance, says that it is not right to jump at the conclusion that AIG got 80% of the profits.

But beyond that, Sosin and AIG were calculating profits in very different ways. Sosin's contract allowed him to up-front profits in an aggressive way and to be compensated accordingly. AIG, on the contrary, was both accruing profits over the life of the contracts and setting up reserves—very large ones, it would appear. When Sosin talks about his distributable profits, says Matthews, he is "not reporting on the conservative side of the ledger."

Says one risk manager: "I'll tell you, if I woke up one day and, God forbid, I was a regulator, I don't think I'd know what to do."

A further indication of that comes from the aftershocks of Sosin's leaving. In the middle of last year, AIG set up reserves of $215 million to recognize an "impairment" in the value of certain FP investments. The recognition of these losses, plus the spread between Sosin's view of profits and AIG's, suggests why the two parties fought bitterly last year over what walk-away money Sosin deserved.

On the eve of arbitration proceedings, they finally reached a settlement, for an undisclosed amount. One report says Sosin received $150 million.

In a recent interview with FORTUNE, Greenberg indicated repeatedly that he thought an aggressive approach to recognizing profits on derivatives was just plain wrong. It's "fair enough," he said, to talk about marking to market. But the uncertainties of this business, he thinks, require that companies have "some degree of flexibility" to delay the recognition of profits on a contract until it's certain they exist. Accounting rules don't make it clear that Greenberg can have as much flexibility as he would like. But don't expect much up-fronting of profits at AIG.

Sosin is still minus a backer. Logic says he might well have tried General Electric, an AAA company whose GE Capital is important in just about every segment of the financial services business except derivatives. Sosin never talks to the press, and GE's chairman, John F. "Jack" Welch, won't say whether Sosin came calling. But if he did, his reception was not warm. Derivatives, said Welch recently, are a business "we have chosen to miss." He sees these instruments as producing trading surprises he doesn't care for, and his experience in financial businesses—for example, lending on commercial real estate—has made him aware of the excesses these businesses can spur. Says Welch: "Things tend to grow to the sky, get a momentum. 'Let's make it a little higher, a little higher.' I think we've learned a lot about that."

Over the near term, the learning process about derivatives is likely to be nudged along by more attempts on the part of corporations to explain the value of these products to their operations. The SEC has put out a call for such explanations, and the Financial Accounting Standards Board has also launched a hurry-up effort to determine just what new information might make sense. On their own,

the big dealer banks that are members of the New York Clearing House are inching toward more disclosure. Certainly, a brighter, clearer light on derivatives in annual reports would be welcome news for investors.

On the regulatory front, there are stirrings aplenty, but mostly slow-motion prospects. In a world fighting bureaucracy, Leach's bill, barring some derivatives disaster, seems a poor bet to get passed. From the so-called Basle Committee on Banking Supervision, which Gerald Corrigan headed until recently, have come proposals for new rules that would stiffen capital requirements for derivatives, which at the moment do not put much strain on capital. Corrigan obviously visualizes these rules as a brake on the growth of derivatives. Indeed, tougher capital policies could be thought of as the equivalent of margin requirements in the stock market, a concept widely accepted as beneficial. But banks are resisting the Basle proposals, and they are a long way from becoming rules.

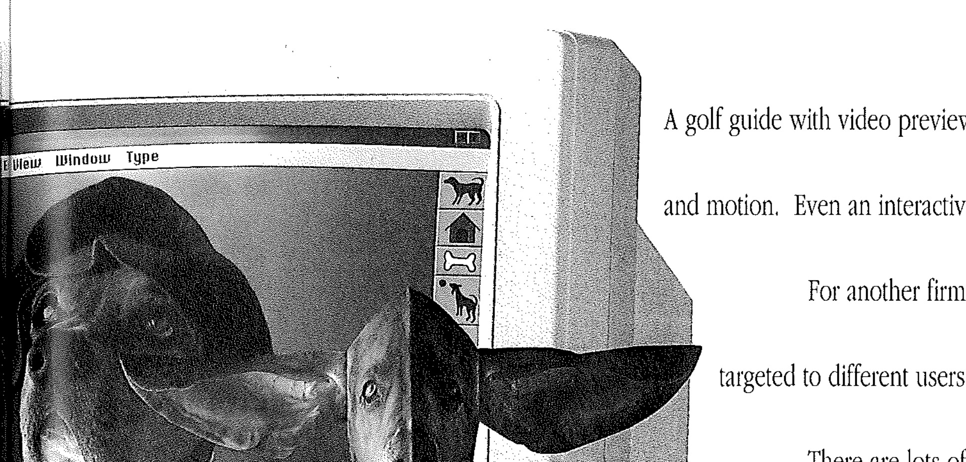
In Kansas City, the National Association of Insurance Commissioners is hovering over new proposals that would give insurers some increased freedom to use derivatives but would at the same time impose a responsibility on their management and boards to exercise great prudence in employing them. The Department of Labor in Washington is brooding over requests from many derivatives dealers that they be allowed to enter into OTC contracts with pension funds. Says the director of exemptions for Pension and Welfare Benefits, Ivan Strasfeld: "There are a lot of problems about these things. For example, if your counterparty goes belly-up, you may have real trouble collecting what you're owed. So we're going slow on these requests."

Adding to the difficulty of regulating derivatives is that bank supervisors are struggling to teach $80,000 bank examiners how to supervise a world in which a top-notch derivatives trader can make $1 million a year easily and maybe much more than that. What, the bank regulators keep asking themselves, should we add to our arsenal of rules?

Says the risk manager of a certain dealer: "I'll tell you, if I woke up one day and, God forbid, I was a regulator, I don't think I'd know what to do. Here in this place, I'm the guy the CEO looks at and says, 'What are our exposures? What do we not want to have happen? What could be the costliest thing that could wrong?' And for me to get the information I need to answer him is a real challenge. And yet I have unlimited access to any information I want. Anybody will take my phone call and answer any question. I tend to know the sort of questions that should be asked. Even given that, it's a full-time job to try to understand all that's going on and to try to make sure that all the pieces are fitting together in a way that gives this organization the kind of risk profile that the shareholders can be comfortable with. And I say to myself, 'If *I'm* in this position, what is a regulator going to do?' "

Wouldn't he, as a risk manager, have many of these problems even if derivatives didn't exist? "Yes," he answers. "But with derivatives there's leverage and sometimes illiquidity, and there's complexity. Three words." They are a mouthful for a big, strapping teenager who just might have the capacity for getting out of control. F

prising new revenue streams.



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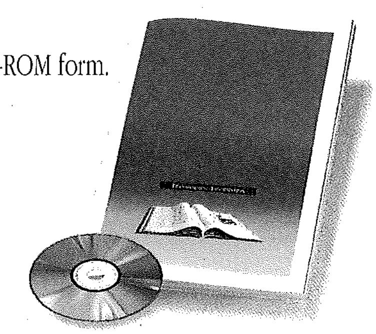

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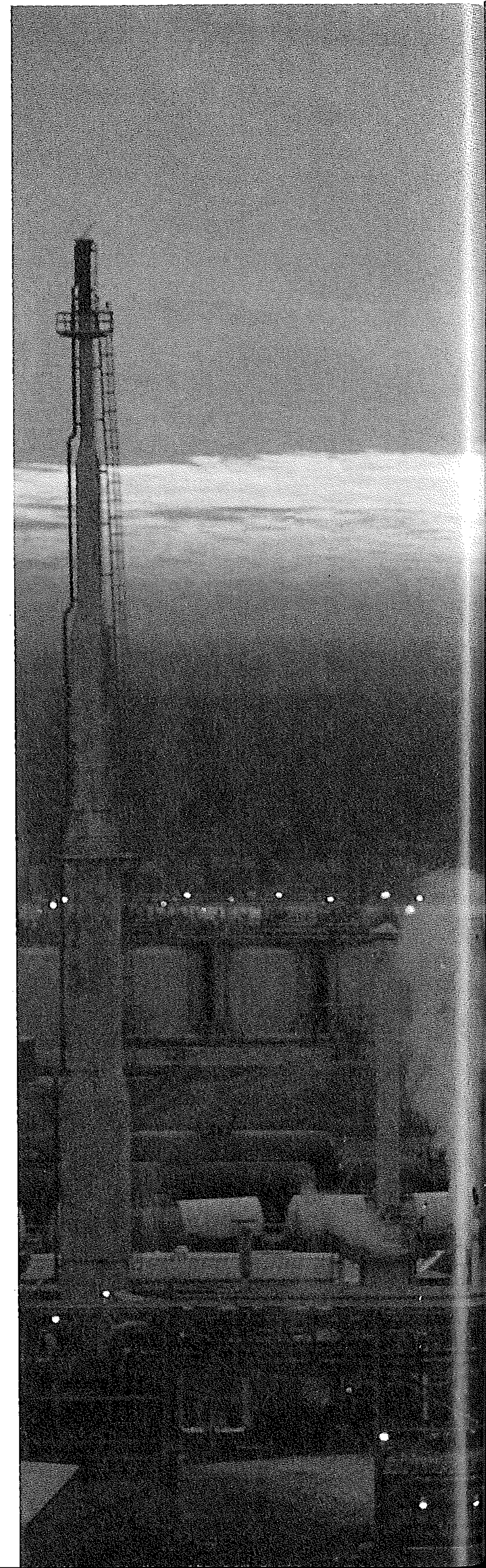


Easy to say, hard to do—especially if you've grown up as a manager during the restructuring era. Here's how six go-for-it companies work their magic. ■ *by Myron Magnet*

NOW WHAT? Nothing lasts forever, not even the wave of restructuring and reengineering that has engulfed American business for the past decade. Sure, the daily paper still brings news of companies firing hapless managers by the thousands, and consulting firms are flush with reengineering work. But what was revolutionary in all this is now routine. And it's increasingly clear that restructuring and reengineering work their wonders only up to a point. Yes, they've pepped up profitability and toughened corporate America for global competition. But more and more executives see that you can get only so far by cutting down and tightening up. As PepsiCo CEO Wayne Calloway puts it, "You can't save your way to prosperity. That alone won't get you there." There comes a point when only growth is growth.

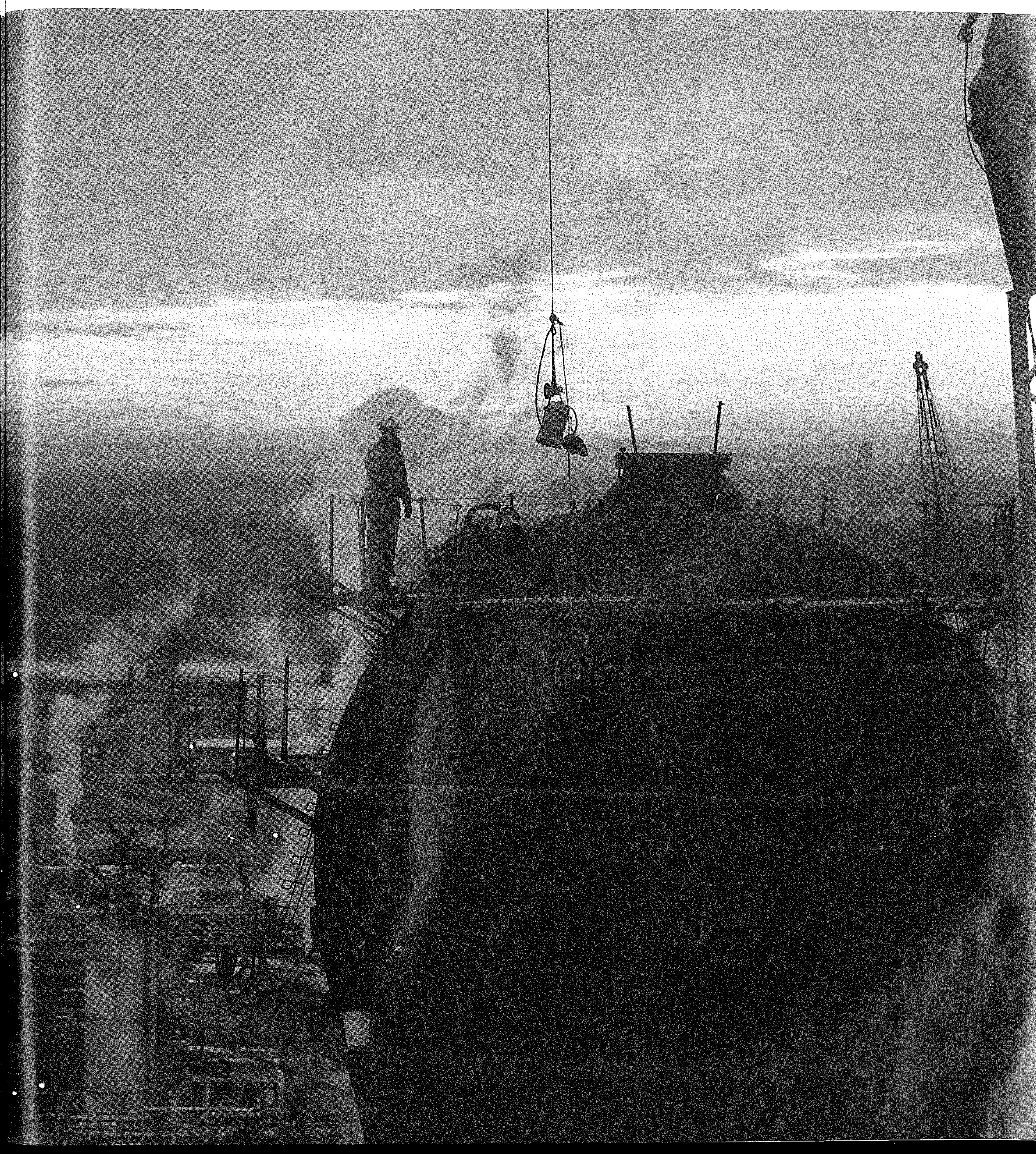
Yet achieving profitable growth is harder than cutting costs. Unlike raising profits by shrinking the denominator of expenses, enlarging the numerator of revenue through product innovation or geographical expansion requires managers "to have a point of view about the future," in the words of Gary Hamel, a professor at the London Business School. It takes vision about where technology is going, how markets can be developed, what consumers will want, where your industry is moving, and how you can move with it—or ahead of it.

The restructuring era hasn't been a breeding ground for such executive skills. Says Hamel: "Over the last decade or so, we've produced a generation of denominator managers in the U.S." When cost cutting and reengineering reach the point of diminishing returns—as they assuredly will—will these neutron executives have the know-how and self-confidence needed to go for growth?

It's not too soon to start thinking about the expansion that your company will need, especially since winning strategies for growth in the Nineties and beyond will be different from the expansion-by-acquisition of the past. As with any other battle, the best way to get ready for the coming high-stakes competition is to ponder the strategies that today's successful campaigners for

Union Carbide is boosting capacity in Louisiana for its hot new way to pump out polyethylene.

PHOTOGRAPH BY PHILIP GOULD



growth have already proved under fire. They mobilize a wide array of weapons, from technology, investment, joint ventures, marketing, and product enhancement, all the way to creating a culture of growth.

The Leverage of Lower Cost

Union Carbide had a technological edge but little money to expand. Solution? Joint ventures to gain market share.

THE COMMODITY chemical business suffers from two chronic ailments: overcapacity and persistent pressure on prices. In search of a cure, Union Carbide is betting hundreds of millions on a strategy that's easy to state but trickier to execute: Be the low-cost producer. The company's aim is to double or even triple the tonnage of petrochemicals coming out of its plants within a decade—and earn, over the course of each economic cycle, an average 15% a year on a larger capital base, up from around 8% now.

For Carbide, the growth magic starts with a competitive advantage in technology. Twenty years ago the company concocted a low-cost process for making polyethylene, the most widely used basic plastic, and has regularly updated it ever since. Though Carbide licenses the recipe to other producers, the company maintains an economic edge because competitors pay out licensing fees and Carbide rakes them in. What's more, Carbide keeps some enhancements all to itself—a still cheaper way of making polyethylene, for instance, or low-cost extensions of the technology to make plastic for TV and phone casings.

Most important for growth right now, 18 months ago Carbide engineers came up with a breakthrough way of making ethylene glycol, the essential raw material of polyester fiber. The process saves 30% in operating cost over the conventional method. That technology, too, has not been licensed.

Expanding capacity in a hugely capital-intensive industry like chemicals is a gargantuan undertaking. With its new glycol technology, Union Carbide is relying on two joint ventures to get the maximum bang out of its investment buck.

The first, with textile producers in Japan and Taiwan, will install the new process in Carbide's plant in Alberta, doubling its size. Located near supplies of cheap Canadian petroleum feedstock, the plant currently makes ethylene glycol the old-fashioned way. The Asian partners will buy half the increased production to make into textiles for the Japanese, Taiwanese, and Chinese markets, which they know well; Carbide, in turn, will sell its share to other producers in the same fast-growing territory. In addition, this venture allows Carbide to use its technology as a kind of currency: Though it will own 50% of the $300 million facility, to be finished late this year, it will put up much less than 50% of the investment.

REPORTER ASSOCIATE *Ricardo Sookdeo*

FORREST ANDERSON—GAMMA/LIAISON

Contacts across China? Bausch & Lomb created a brand-new market by teaching opticians to fit lenses.

Weighing in at $2 billion, Carbide's second new joint venture, to build a glycol and polyethylene plant in Kuwait with a subsidiary of Kuwait Petroleum Corp., is the world's biggest current petrochemical project. Partnership with the Kuwaitis will ensure a stable supply of cheap raw materials and energy. Onstream in early 1997, this plant will also produce mainly for customers in Southeast Asian markets, completing Carbide's Pacific Rim coverage.

Being the low-cost producer means squeezing costs out of all parts of the business, from maintenance to corporate communications. Carbide, which had spent years in the Eighties cutting out whole divisions to pay down the vast debt incurred from fighting off a takeover bid in the wake of the Bhopal tragedy, decided in 1990 to try to shave costs by $400 million. To do that, management devised an exercise it called work process improvement, which it discovered only later—like Molière's character who was thrilled to learn he'd been speaking prose all his life—was what other companies called reengineering. So close was the target when the reengineering was only partly done that management saw no sweat in raising the hurdle to $575 million.

But cutting and reengineering were always only part of the plan. Says CEO Robert Kennedy: "The senior management knew from the beginning of our restructuring that we had to have a commitment to growth, because ultimately you had to say, what kind of a company is this going to be?" By century's end, if all goes as planned, a much bigger one.

Find and Extend Your Core

Bausch & Lomb grew sevenfold by lopping itself in half and then investing in new businesses at home and abroad.

IF YOU HAVE TO ASK why Bausch & Lomb is a winner worth scrutinizing, you haven't been paying attention. In the past decade, its sales have jumped from around $400 million a year to nearly $2 billion, while the market value of its shares has grown even more impressively—from under $400 million to nearly $3 billion.

But in 1981, when pudgy and avuncular Daniel Gill, 57, became CEO, the company was adrift. Half its sales came from products with market shares of 5% or less. Its technol-

ogy was sliding into history's dustbin: glass-lens factories in an era of plastic, and a line of scientific instruments whose key was no longer the Bausch & Lomb optics at the front but someone else's computer at the back. Such operations earned little, while the contact lens business that produced almost all the profits was coming under hot competitive fire. Beneath all this was a risk-averse, centralized culture whose business philosophy seemed limited to "a penny saved is a penny earned." "Some skeptics," Gill recalls, "thought Bausch & Lomb would not be a survivor."

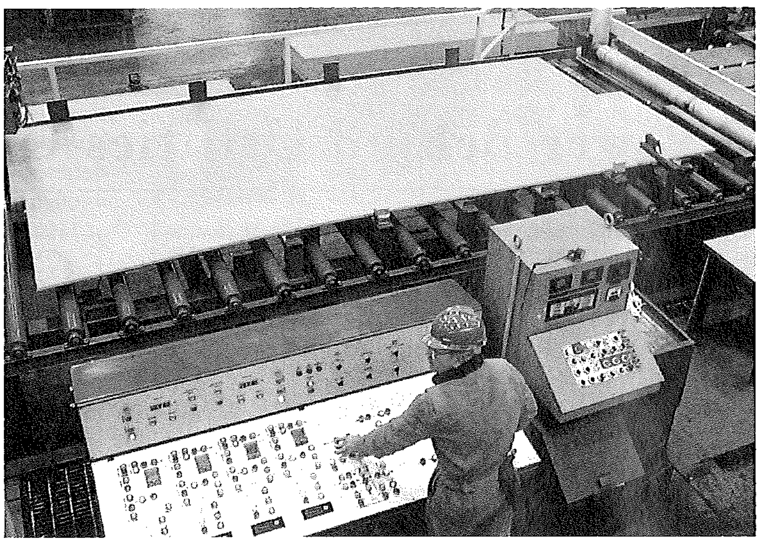
Gill immediately began dumping the losers, and over the next five years shed operations that generated half the company's sales, along with most of top management. But, thanks to his prior job, at Abbott Laboratories, he knew when he started that downsizing wouldn't be enough. Says he: "I had been raised in a culture that said you make money by making wise investments."

As Step 1 of his growth formula, he recast Bausch & Lomb in Abbott's growth-oriented image. A powerful symbol set the tone: Early on, Gill gutted his grungy Rochester, New York, headquarters, rebuilding it in traditional, prosperous corporate style—to the wide-eyed astonishment of his penny-pinching employees. The message: Things are going to be completely different, and we have cash to pour into the business. To be sure, today's managers are more used to the opposite—the new CEO changing things by flying coach and selling the imperial headquarters—but unusual problems require remedies to match. Explains Gill: "To be classy, you've got to feel classy."

Gill knew that the core businesses that were left—contact lenses, lens-care products, and Ray Ban sunglasses—were parched for investment. Their high market shares rested on extremely wobbly technological underpinnings, from outdated factories to archaic computer systems. So as Step 2, he used the proceeds from divestitures to triple capital spending and pump it into modernization.

Step 3 was to find new strengths that the company could build onto its remaining base. Gill sent market researchers to ask consumers and health care professionals what kinds of products would seem more desirable to them with Bausch & Lomb's name attached. Out of that "global what-can-we-be search," as Gill calls it, came four expansions of the company's health care core.

Contact lenses and solutions grew into a general eye-care business, with over-the-counter preparations developed internally and prescription eye drugs added through acquisition. Because most people surveyed thought Bausch & Lomb was a German company with precision German engineering, they told market researchers that they'd eagerly buy hearing aids with the Bausch & Lomb label. Cashing in on that misapprehension, Gill bought Miracle Ear, a manufacturer with a thousand franchise outlets.


WYATT MCSPADDEN

A ribbon of wood siding rolls off a continuous press at a Louisiana-Pacific factory.

When the marketers discovered that many buyers of the company's chief eye-care product, Sensitive Eyes drops, had sensitive skin that they would willingly entrust to the brand they put in their eyes, Gill started a lotion and cream business. And since consumer confidence in the company seemed to radiate to every organ above the neck, Gill planted his standard in the mouth, too, buying the maker of the Interplak electric toothbrush and an array of companies that made implants for dentists. When the acquired companies in all these fields came under Bausch & Lomb's marketing and sales umbrella, sales typically soared 15% a year, sometimes even 30%.

As Step 4, Gill strengthened and expanded his global market presence. He consolidated the minor-league companies Bausch & Lomb already owned abroad—hitherto as separate, obscure, and uncoordinated as the wriggling worms in a spadeful of loam—into a handful of regional operations. To the higher-quality bosses he could now afford to put over them, he gave real profit-and-loss responsibility. He then infused the marketing support and research these companies had never had, and upgraded their manufacturing technology. "When we began to run them like businesses," he says, "wonderful things happened. International sales just exploded."

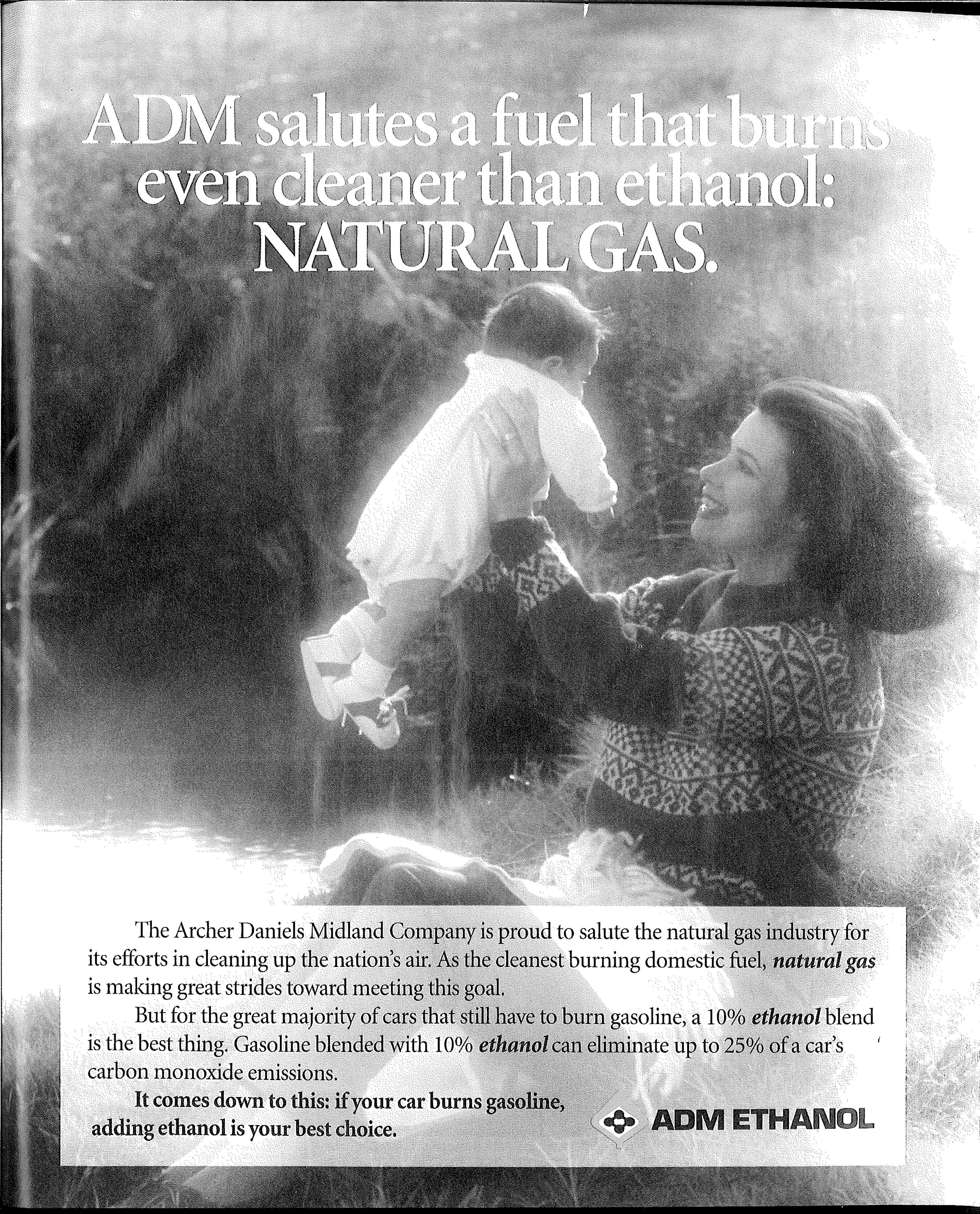
So Gill pushed for more growth by attacking emerging markets. In a joint venture with Beijing Optical, he built factories in China in 1987, and Bausch & Lomb taught thousands of local opticians how to fit contact lenses. To sell them, the company set up China's first contact lens shops in major department stores, converting drab corners into oases of optical glitz. In an economy with relatively little to buy as yet, the appearance-conscious Chinese made Bausch & Lomb's subsidiary there profitable within two years.

On a total investment of under $20 million in this non-capital-intensive industry, Bausch & Lomb created and now utterly dominates the Chinese contact lens market. And the global phase of Gill's growth strategy, which included expansion into other underdeveloped markets, such as India and Poland, has raised overseas sales from under 25% of Bausch & Lomb's revenues when he started to 50%, while boosting operating profit margins from 8% to around 20%.

If You Can't Invent, Copy

But do so creatively. That's how Louisiana-Pacific learned to make a timber substitute and satisfy new customers.

THIS FOREST PRODUCTS company's growth story began with CEO Harry Merlo's no-bull assessment of his industry's future. Once the government expanded the Redwood National Forest in 1978, putting all Louisiana-Pacific's old-growth timber off limits to logging, Merlo foresaw that the big trees that had been his raw material would soon become taboo to lumbermen nationwide. "I'm not sure it's right or wrong that the


ADM salutes a fuel that burns even cleaner than ethanol:
NATURAL GAS.
The Archer Daniels Midland Company is proud to salute the natural gas industry for its efforts in cleaning up the nation's air. As the cleanest burning domestic fuel, natural gas is making great strides toward meeting this goal.
But for the great majority of cars that still have to burn gasoline, a 10% ethanol blend is the best thing. Gasoline blended with 10% ethanol can eliminate up to 25% of a car's carbon monoxide emissions.
It comes down to this: if your car burns gasoline, adding ethanol is your best choice.
ADM ETHANOL


COMPAQ
Microsoft Excel
File Edit Gallery Chart Format Macro Window Help
Monthly Income and Expenses
CONTURA
AERO 4/33C
intel inside

natural forest is being reserved for owls and fish," he says, "but I'm not going to argue with it. We've got to move the company ahead with the resource that's available."

The task was to figure out some other way to make the building materials his company sold. Experience had taught Merlo that you *can* make silk purses out of sow's ears. As a 12-year-old working in the grocery store of a northern California sawmill camp, he used to take home the brains and hearts and tripe that the butcher threw out, and his Italian-immigrant mother would transform them into savory stews for the lodgers of the boarding house she ran. "To the butcher, this stuff had no value," he recalls, "but to me it had a lot of value, because I knew what Mom could do with it." So in pondering Louisiana-Pacific's future, Merlo thought, why not figure out how to use small trees of waste species no one cared about? The likely candidate was fast-growing aspen, which stretched in a broad band from Maine to British Columbia.

Unlike the hapless bosses of big U.S. steel companies, who long scoffed at foreign-made continuous casters before installing them decades late, Merlo was a techie, enthusiastically up-to-date with every new wrinkle in his industry. He knew that in Canada a few lumber manufacturers were already shaving small trees into wafers, which they glued and pressed together to make something like plywood. After visiting every plant that made the product, he figured he could make it better.

Instead of arranging the wafers randomly, he lined them up to make a three-layer board, with the middle layer's grain running roughly perpendicular to the outer two for strength and stability. His product, introduced at the end of the Seventies, turned out to be cheaper and stronger than plywood. Merlo later found he could cover the waferwood with heavy paper, embossed with wood grain and sealed with resin, and use it as siding. He learned to combine waferwood with another kind of engineered lumber his mills produced to make I-beams to replace the increasingly scarce lumber needed for floor joists and roof trusses.

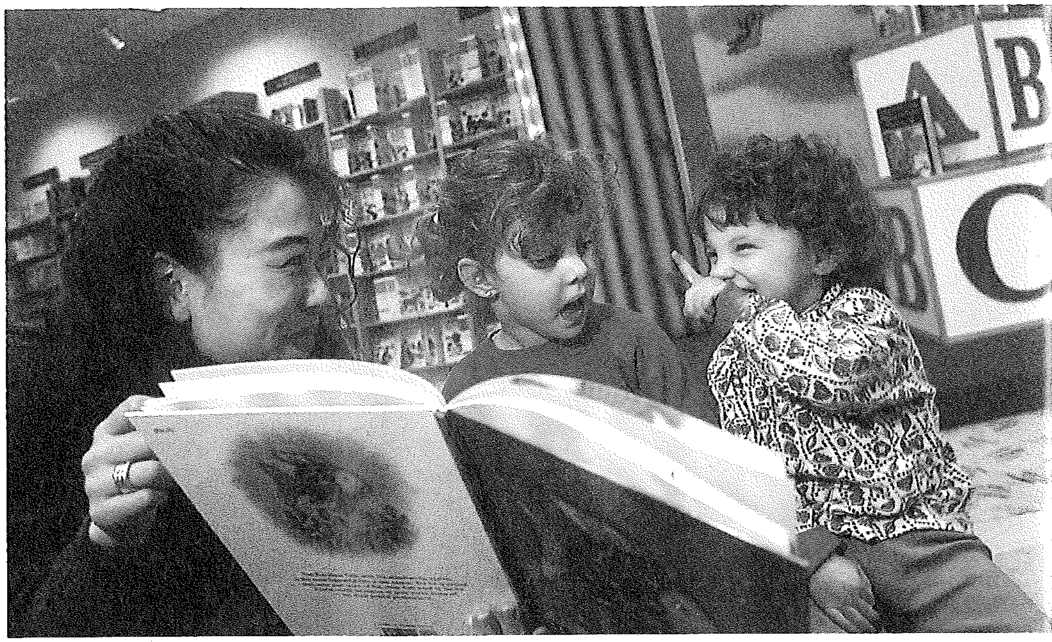
Now the company has started improving on sheetrock by mixing shredded newspapers with the gypsum. The resulting board, introduced in 1990, is more soundproof than sheetrock, holds nails better, breaks less easily, can be tiled more securely, and is produced more efficiently. Says Merlo: "It wasn't any problem for us to take the business away from plywood with waferwood; it won't be any problem to take the business away from wallboard with this product." He expects to sell billions of feet of it a year within the next decade. That doesn't sound unreasonable, considering that his annual waferwood output went from nothing to nearly four billion square feet in 13 years.

You'd think Louisiana-Pacific had a lab full of engineers to dream up these products. But no, they materialized without a nickel's worth of R&D. "We just copied," says Merlo. But this was inspired copying: He knew everything that was out there to be imitated, and he copied creatively, boosting the efficiency of the technology he'd seen or adding desirable features to the products he produced.

His first presses were eight feet wide, twice the width of the Canadian presses he'd seen, producing the big sheets that customers wanted. He built other presses that more efficiently rolled out continuous ribbons of manufactured wood, which could be cut to any length desired. Instead of having to cut trees into 33-inch logs to fit the machine that shaved them into wafers, Merlo developed a mechanism that allows Louisiana-Pacific to dump whole trees onto a movable bed to be continuously fed to the waferizing blade. He could thus use every part of the tree but its shadow, as he likes to say, even burning the bark to heat the oil that fuels his presses.

The company can so successfully improve processes and devise products builders want because it is an operating culture to the core, with a bare-bones headquarters staff and an aversion to meetings. "All of our people are in the plant all the time," says Merlo. "I know every cost; I know everything we make; I love the mills, and I love to be in them. All of our people are that way." Well, sure, since he hires in his own hands-on, down-to-earth image. As he says, "I'd never hire a guy I wouldn't work for."

STEVEN RUBIN—JB PICTURES



Children's story hour draws customers of all ages at a Barnes & Noble superstore in New Jersey.

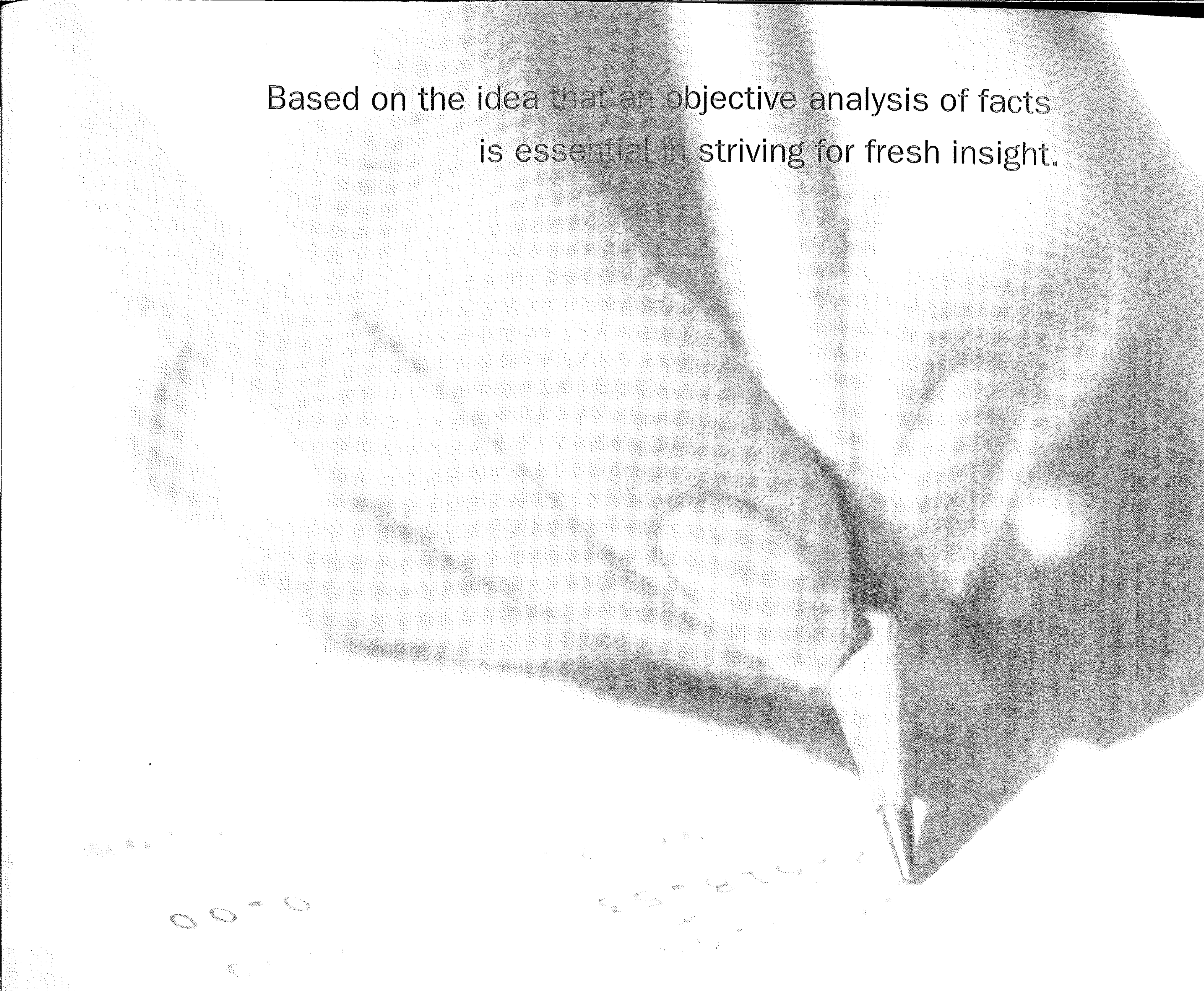
Look Into Customer's Souls

When Barnes & Noble figured out that buyers of books also want entertainment (and coffee), sales exploded.

WHAT IS NOW the nation's No. 1 bookseller was born in 1971, when Barnes & Noble founder and CEO Leonard Riggio bought a single stagnant Manhattan store. Today it's a 937-store chain. Why? Credit two profound insights into what consumers really want and a readiness to make big bets on that understanding.

Insight 1: "Shopping is a form of entertainment," as Riggio phrases it. Consumers aren't corporate purchasing managers, singlemindedly seeking specific commodities at the best possible price. To consumers, shopping is a social activity. They do it to mingle with others in a prosperous-feeling crowd, to see what's new, to enjoy the theatrical dazzle of the display, to treat themselves to something interesting or unexpected.

continued



So Riggio learned to craft stores that decoct the pure elixir of the shopping experience. In 1989, he began to perfect the formula: a high-visibility, upscale, usually suburban location to draw the crowds where they live; enough woody, traditional, soft-colored library atmosphere to please the book lovers; enough sophisticated modern architecture and graphics, sweeping vistas, and stylish displays to satisfy fans of the theater of consumption. And for everyone, plenty of welcoming public space, where they can meet other people and feel at home in an urbane throng. Approachable employees complete the welcoming scene; they're intentionally nothing like the snooty booksellers that boss Riggio—short, sad-faced, and unassuming—found intimidating when he was young.

People at Riggio's superstores settle in at his many heavy chairs and tables to browse through piles of books; they fill the cafés he's put into the superstores to increase the festivity; they hang out in their chosen sections to pick up like-minded lovers of sports and fitness, high-toned fiction, New Age emoting, or gay and lesbian studies. Consumers attend the readings and signings he puts on; they bring their kids to his puppet shows and story hours; they read the accolades to his stores in newspapers and lifestyle magazines, captivated by something new and hot. Riggio makes sure they always have clean bathrooms, too, so they don't have to leave in a hurry. "If I get you for two hours, I've got you," he says. "I don't need more books; I need more people." As CFO Irene Miller sums up: "The feel-good part of the store, the quality-of-life contribution, is a big part of the success."

Insight 2: Books are consumer products. Says Riggio: "People have the mistaken notion that the thing you do with books is read them. They think all a book is about is information." Wrong. Maybe 5% of what gets printed gets read, and those who read most are also the biggest accumulators of unread volumes. People buy books for what the purchase says about them—their taste, their cultivation, their trendiness. Their aim, says Riggio, is to connect themselves, or those to whom they give books as gifts, with all the other refined owners of Edgar Allan Poe collections or sensitive owners of Virginia Woolf collections.

The consequence is that, if you try, you can sell books as consumer products, with seductive displays, flashy posters, an emphasis on the glamour of the book as an object and the fashionableness of the best-seller and the trendy author. Riggio has found he can even wrap his customer in the glamour, by sending him or her out with shopping bags sporting his trademark high-style sketches of famous authors. "It's amazing," says Riggio, "how people almost *wear* the bag that they take from the store."

Before developing the superstore formula, Barnes & Noble grew by spurts of innovative retailing—it was the first bookseller to discount and to stay open on Sundays, for example. And it grew in spurts of opportunistic acquisition, buying the 754-store B. Dalton chain, a big presence in shopping malls, in 1986, and later acquiring the Bookstop and Doubleday chains.

But with the superstore formula, the company has hit on a model for future internal growth, with economics as investor-friendly as the stores are consumer-friendly. Security analysts think that the stores, when mature, will return a plump 28% on investment, with stable operating profit margins of a comfortable 7% to 8%. No wonder Barnes & Noble is rushing to open 75 this year, bringing the superstore total to 280, up from a mere 23 five years ago.

One-Foot Growth Path

Rather than add capacity, Ford stretched what it had. Result: As demand surged, the company was ready to ride.

TO REVERSE the old saying, Ford Motor shows how sometimes the best offense is a good defense. A decade ago, as Ford was losing share under the Japanese onslaught, growth was far from management's mind. "In all honesty," says CEO Alex Trotman in his mellifluous British accent, "our objective back then was to regain competitiveness and not lose." Ford focused anxiously on the basics of the business, boosting quality and productivity and making products more customer-pleasing. Customers responded. Says Trotman: "We were so successful that we have been growing for about a decade."

Usually, you plan for growth and build up capacity in advance of getting it, as Union Carbide is doing. Had Ford's bosses foreseen in 1980 the five points of market share growth that ultimately materialized, they might well have built new plants, especially for the popular Explorer. Instead, they stretched capacity inch by inch, adding extensions on existing factories, untangling bottlenecks, changing shift patterns, moving walls in the engine lines, and, of course, upping productivity. The result: However imperceptibly, Ford's U.S. capacity grew a weighty 20% over the last decade—with the plants running at 100% to 114% of their rated capability.

Today, now that Ford's managers explicitly want to grow, they've become attached to this strategy of first working on the fundamentals of quality and customer satisfaction and then stretching capacity to meet demand. That's their growth strategy for Europe. Says Trotman: "As the share comes to us, we will ratchet up capacity in a cautious way." In Japan, where Ford aims to double its still small export sales (5,400 in 1993) annually for the next few years, the emphasis is on support systems—parts distribution centers, training and technical centers, and the opening a few weeks ago of a Ford Credit office.

Trotman calls all this the "one-foot approach"—better, he believes, than jumping in with both feet. To build capacity in anticipation of demand is dangerous, he says: "You may be trapped into the situation some companies are in today, of having huge excess capacity and a work force that is very hard to reduce." Current conditions only make him more relieved that his managers rejected going with both feet into Eastern Europe after the Wall came down, or into Russia after the fall of communism.

Like Bausch & Lomb's Gill and Carbide's Kennedy, Trotman believes that Asia will become the great arena of his industry's growth before long. Even so, he is going into China with only one toe for now, feeling his way gingerly. A dozen dealers now sell the few Ford cars allowed in from the U.S., and Ford is working on establishing several joint ventures to build component plants to supply domestic Chinese manufacturers—and to get a sense of the market. It will get, in addition, a sense of possible partners with whom it might build a car plant, perhaps beginning in two years. At present, says Trotman, "I feel the need for close attention and an urgent feeling, but I don't feel the need for urgent action."

Building a Culture of Growth

At PepsiCo, managers "have growth stamped on our foreheads," they say. That mindset moves mountains.

PEPSICO, a whole university of growth, teaches lessons in the why as well as the how of it, with CEO Wayne Calloway a principal professor of why. He's worth listening to, since he can *do* as well as teach: For the past de-

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At The Travelers we realize the contribution your company's employees make. This is why we help our customers reduce loss costs by focusing on the human side.

Through our innovative program of injury prevention, we work with you to cut down on claims and costs by keeping your employees healthy and on the job. For one customer this helped cut accidents by 50% – and saved $1.5 million in the process.

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Our commitment to reducing loss cost is just one of the reasons we maintain a consistent 95% retention rate among our large commercial accounts.

Even though we've helped save American business over $300 million, we know that most accidents cost more than money.

All backed by 130 years of experience and the understanding that for each employee under America's umbrella, any accident is one too many.

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cade PepsiCo's sales have grown at an annual compound rate of 17%.

You need growth, he says, not just for its immediate financial reward but also to keep your management team energized and renewed with fresh talent, so you can stay vibrant for the future. A static company has no opportunity for gifted managers to build anything; they either leave or end up focused inward, struggling among themselves for a bigger piece of the same-size pie, instead of looking out toward the competitive horizon. Or, just as destructive, they focus on the trivial and bureaucratic, turning an organization into an impotent mandarin court, where no promising young person would want to work, and the future is lost.


WILL MCINTYRE

A spicy new market: Students scarf Pizza Hut's pies at this North Carolina high school.

That's why Calloway thinks his key role is to create a culture of growth—one that stimulates risk taking and molds young managers with the self-confidence and know-how to build new businesses. It's a subtle process. Says Calloway: "You can't just get a memo from the CEO that says, 'Stop being so risk-averse, dammit, or I'll have your head.' "

The culture starts with the kind of people you hire and promote, and Calloway keeps close tabs on them. Says he: "I spend over half my time *knowing* those folks. Of the top 500 or 600 employees, I know them all." That includes the 26-year-old up-and-comers, too, whom Calloway likes to identify early and send to posts around the world for an education in self-reliance in the school of hard knocks. "Then you've got a 32-year-old instead of a 52-year-old that you can promote," he says.

At the core of the growth culture is one key value. Explains Calloway: "It's that whole mindset that says, 'I don't have to keep on with what I'm doing. I can change the game.' To play the game the way it's being played now, obviously there's a limit."

Growth managers need to reconceive their business entirely, not just improve it incrementally at the edges. They need, says vice chairman Roger Enrico, the ability to break the rules, "to be able to think outside the box, not to be mesmerized by the limitations of the way things are done." And how do you get growth? Says Enrico: "It's all in the mind; it's a mindset."

PepsiCo's Pizza Hut division is a perfect example of what Calloway and Enrico mean by radically redefining your business. Watching Domino's swallow 90% of the growth in the chain pizza business when it began delivering in 1985, Pizza Hut's management decided to see Domino's bet and raise it. Till then, Pizza Hut had thought of itself as a restaurant chain. No more. Henceforward, recalls Pizza Hut boss Allan Huston, the strategy would be "to go from being a pizza restaurant company to being a pizza distribution company."

So delivery, of course, but that was only a first step. The company soon began to make deals with "contract feeders" like Host Marriott to provide the materials for pizza served in airports, hospitals, colleges, schools, even corporate cafeterias. Pizza Hut's revenues more than doubled. Moving even further, a trial Pizza Hut concession in several Wal-Marts is now serving up slices.

For the further future, it's on beyond pizza. As part of another of those changes in mindset that build businesses, the company is experimenting with dinners like chicken or pasta that could be sent through its delivery operation. Explains Huston: "The product in delivery is actually the service. Once you realize that, then it's just a question of what you want to deliver."

PepsiCo's growth culture even turns cutting back into fuel for expansion. Says vice chairman Enrico: "The people who go through restructuring and downsizing without a plan of growth are like the people who consume assets rather than invest in them." When he himself ran Pepsi's Frito-Lay division, he worried that his 12% growth rate was not only droopy by PepsiCo's stellar standards but also wasn't sustainable because of increased competition. So in 1991 he decided to trim $100 million out of what he was spending to administer the business by dumping 1,800 middle managers, and to use the $100 million that he saved to make the business grow.

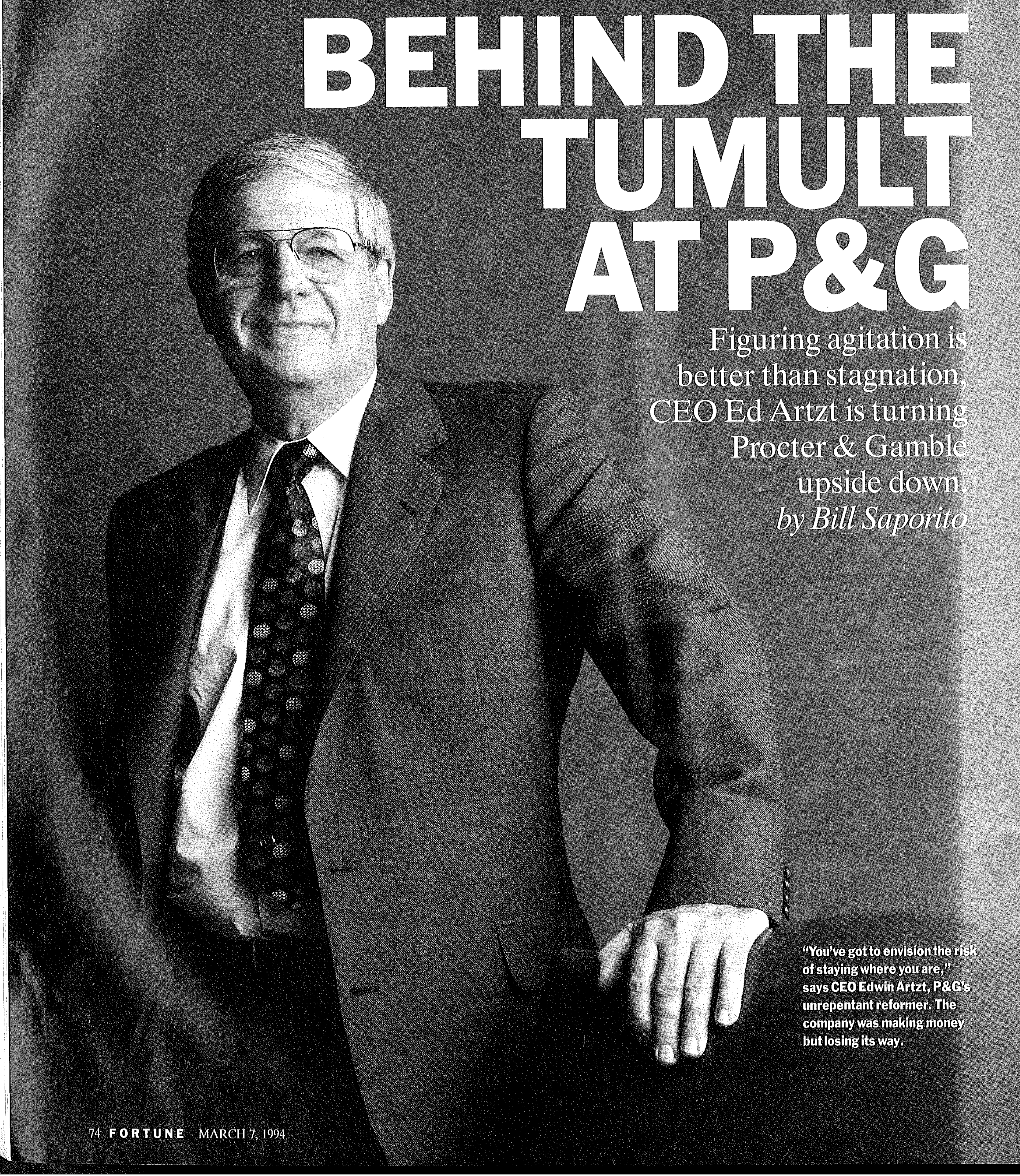
Accordingly, he cut prices and poured investment dollars into new products and improved quality. The result: In three years, Frito-Lay increased its market share in its mature business by five percentage points, and it is still growing. Competitors are disheartened: Borden, for one, has its big snack-food business up for sale.

Without doubt, it's easier to get a dollar of profit growth by cutting costs than by raising revenues. But investors, the final arbiters of value, well know that those two dollars are very unlike in terms of the futures they presage for the companies in question. A new study of 847 big public corporations by Mercer Management Consulting in Boston neatly quantifies this difference. It found that the compound annual growth rate in the market value of the companies that achieved higher-than-average profit growth but lower revenue growth than their industry's average—the cost cutters, in other words—was 11.6 from 1989 to 1992. By contrast, the companies that achieved their higher-than-average profits as a result of higher-than-average revenue growth saw their market value jump at an annual rate double that—23.5%. As usual, the market looks forward with wise eyes. ■

BEHIND THE TUMULT AT P&G

Figuring agitation is better than stagnation, CEO Ed Artzt is turning Procter & Gamble upside down.

by Bill Saporito



"You've got to envision the risk of staying where you are," says CEO Edwin Artzt, P&G's unrepentant reformer. The company was making money but losing its way.

CALL IT the $725 restructuring. Not particularly pricey for a $30-billion-a-year packaged-goods gargantua like Procter & Gamble. Why $725? That's the premium a brand-loyal family had to pay in 1993 for a year's worth of P&G products vs. private-label or low-priced brands. In the value decade a premium like that spells trouble—just ask Philip Morris. What P&G had was a few hundred bucks of evidence that high prices were slowly transforming the company from mass marketer to mastodon.

But even continents can move, and seismic activity is under way at Procter to grind away that $725 bill. "It is a tectonic shift in a huge, iconic corporation," says Gordon Wade, an ex-P&Ger with the Partnering Group who advises many P&G competitors. "What we have here is a company that has created a platform to execute a strategy that is dramatically superior to anything its competitors have to offer."

The new platform is anchored in value, a notion these days about as original as sin. It recognizes the obvious: P&G had been overcharging for detergents (Tide), toothpaste (Crest), cough syrup (Vicks), diapers (Pampers), and such; consumers then began underconsuming. So Procter, for decades the ultimate hierarchy—to be unkind, an inwardly pointed pyramid of anal-retentive order takers loathed by competitors and retailer customers alike—is upending the pyramid.

REPORTER ASSOCIATE *Ani Hadjian*

The telltale of this course shift is the company's conversion to everyday low pricing (EDLP)—value pricing to Procter—as opposed to maintaining high list prices punctured by frequent and irregular discounts. Less understood, and far more critical to P&G's future, is the teardown and rebuild of nearly every activity that contributes to high costs. Says Frank Blod of the New England Consulting Group: "EDLP is the manifestation of a very dramatic business shift, a bold, high-risk new direction for a corporation of this size."

P&G is redesigning the way it develops, manufactures, distributes, prices, markets, and sells products to deliver better value at every point in the supply chain. A new management structure is three levels lighter, to make the company a swifter global marketer. As for P&G's vaunted brands, these once regal equities will bend to the wishes of consumers everywhere—South America, China, the U.S.—and take whatever forms and prices the far-flung consumers can afford. Value has made Procter a hunter of revenues rather than a gatherer.

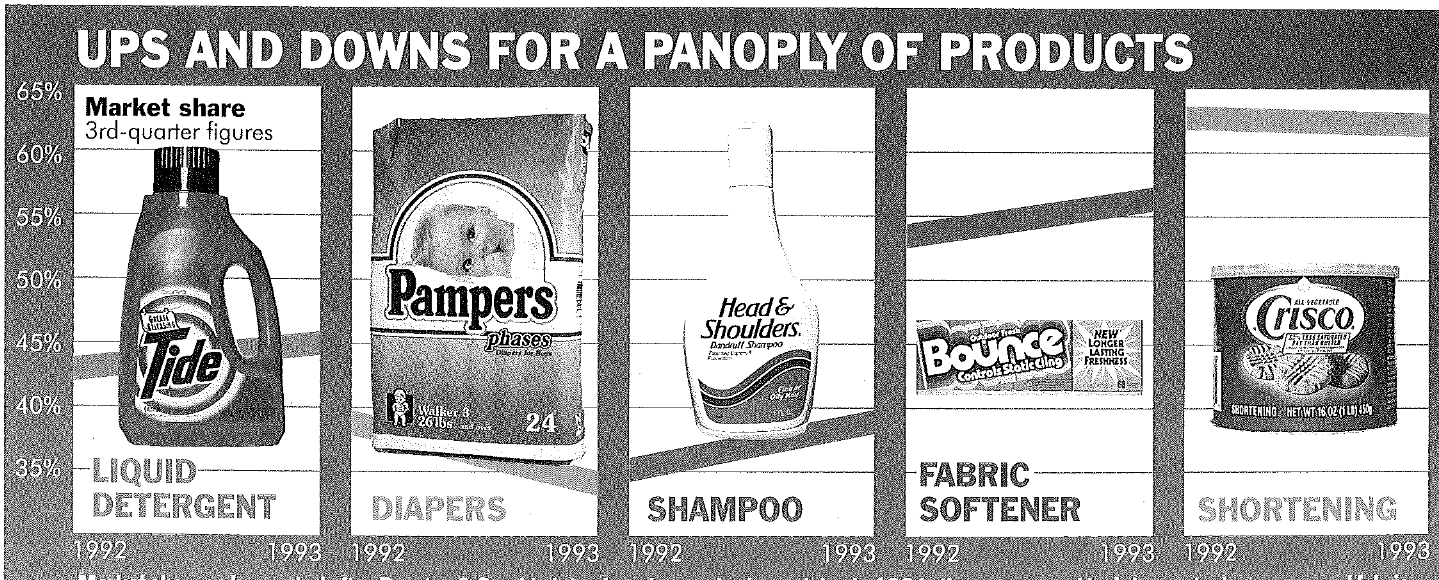
CEO and *agent provocateur* Edwin Artzt sees this reformation as the only way to rekindle the brand loyalty that fired P&G in the first place. Consumers aren't willing to subsidize costs that don't show up in the product, he says, so "redefining consumer value relates to being aware of charging consumers for non-value-added costs. That's the point we drive home to our people. The hardest thing for a company is to change its thinking. And so you have to have rules that give us intellectual permission to make changes." The cynical may note the irony of P&G making a rule to make rule-breaking okay.

Mind you, "it's beginning to work like crazy," says Artzt, 63, a silo-smasher who has accelerated the revamping begun by his predecessor, John Smale. As he begins his fourth year at the controls, the company says that in 22 of 32 categories, domestic unit volume and market share are rising. Perhaps "recovering" is a better word. Introducing EDLP cost Procter plenty of sales, some from inventory adjustments, some from angry grocers who prefer frenzied promotions and took business elsewhere. Nevertheless, the company has momentum in the U.S. and abroad and is lowering costs dramatically. Says Andrew Shore, an analyst with PaineWebber: "P&G is more than a winner long-term; it's one of the biggest winners."

P&G's announcement in late 1991 that it would convert some of its products to EDLP shocked many retailers (a.k.a. the trade). Ditto many people inside the company. They had no inkling of the move, nor could they have known it was the first shot in a revolution whose outcome was unplanned and unknown. Says a former executive: "The way Procter advanced EDLP was a preemptive strike inside the company as well as at the trade."

Something dramatic was necessary, because Procter was struggling in the churning retail channel. The growth of membership warehouse clubs such as Costco and Pace, and of discount stores

UPS AND DOWNS FOR A PANOPLY OF PRODUCTS



Market shares plummeted after Procter & Gamble introduced everyday low pricing in 1991, then recovered in detergent, shampoos, and fabric softeners, as well as paper products (not shown). P&G's twin nemeses in diapers, Kimberly-Clark and private-label brands, still give it fits.

GARTH VAUGHAN (5)

FORTUNE CHART / SOURCE: J.P. MORGAN

PHOTOGRAPH BY MICHAEL O'NEILL

WHERE P&G's PROFITS COME FROM

CATEGORY	MAJOR BRANDS	SALES* in millions	OPERATING PROFIT* in millions	COMMENTS
PERSONAL CARE	Always, Crest, Cover Girl, Ivory, Vicks, Max Factor, Pampers	$16,238	$1,656	Diaper business still absorbing punishment in the U.S.; a redesigned product is due in the fall. Facial soaps are cleaning up. Pantene shampoo is a worldwide hit. But in cosmetics it's a mixed bag: Clarion was killed, Max Factor is struggling, Cover Girl looks pretty.
LAUNDRY, CLEANING	Tide, Cascade, Ariel, Comet, Bounce, Fairy	$10,061	$1,396	The success of superconcentrated detergents plus price cuts are making business jump. "We've reinvented the category," crows suds boss Alan G. Lafley. The ruler of fabric softeners still commands the market, and Ultra Downy toughens the territory.
FOOD, BEVERAGES	Crisco, Folgers, Duncan Hines, Jif	$3,271	$255	Top-line growth remains sluggish, as the dry grocery business takes its lumps. Margins are improving but still trail the industry's. Is P&G a long-term player?

*Year ending 6/30/93.

FORTUNE CHART / SOURCE: J.P. MORGAN

like Wal-Mart, pulled P&G in a different direction from the one that had worked with supermarkets and drugstores. The new-style retailers weren't interested in yo-yo prices; they wanted goods at the best price day in, day out, in truckload quantities and, in the case of price clubs, delivered directly from the factory, not via a warehouse. As P&G discovered in its relationship with Wal-Mart, this is an efficient way to do business.

Some supermarkets and wholesalers like the old way just fine. They want case allowances, cooperative advertising dollars, and other discounts to be able to lure shoppers into the store with hot specials. P&G's approach doesn't eliminate deals completely. The company still wants to be able to reward consumers for their loyalty, and an occasional discount is still a good way to do it. But the company does want consistency in the price the consumer pays at other times.

Procter and other companies didn't see the discounts passed on to consumers reliably. Many distributors stock up with huge quantities of deal goods, a process known as forward buying. When the discount expires, they can sell at regular prices goods that they purchased on the cheap, or ship them to regions that aren't "on deal," a profit-spreading technique called diverting.

All this wheeling and dealing became self-defeating. Pre-EDLP, consumers increasingly bought only when they had coupons or spotted a temporary price reduction, particularly in categories like diapers, where the yearly cost of keeping baby dry runs more than $500. This shrewd shopping is an important reason why supermarket sales decreased 1% last year, says a study by Information Resources published in *Grocery Marketing*—the first such decline ever recorded. Consumers also discovered that private-label products were gaining in quality and were, in the throes of recession, much more appealing in price.

During the frenzy to keep the private-label wolf from the door, P&G's controls began to crumble. The sales force converted "flexible" marketing programs to merely shipping pallet-loads of promotional money to retailers, even though internal rules limited the value of such arrangements to 5% of total sales for any product. Says Artzt: "Somewhere along the line, and I don't know where, we argued that 5% was impractical, so let's raise it to 10%. Sooner or later the policy goes away." At one point, 17% of all products on average were being sold on deal—and in some categories 100%. "You've lost control," he says. "And you don't even know what it's costing you."

"I freely admit that we were just attacking the symptoms of a broader problem," says Artzt.

Worse, this promotional tail-chasing sent costs spiraling. The company was making 55 daily price changes on some 80 brands, necessitating rework on every third order. Ordering usually peaked at the end of a quarter (gotta make those numbers), sending factories into paroxysms of overtime followed by periods of underutilization. The phenomenon is known as the bullwhip effect. P&G plants ran at 55% to 60% of rated efficiency on average, with huge variations in output.

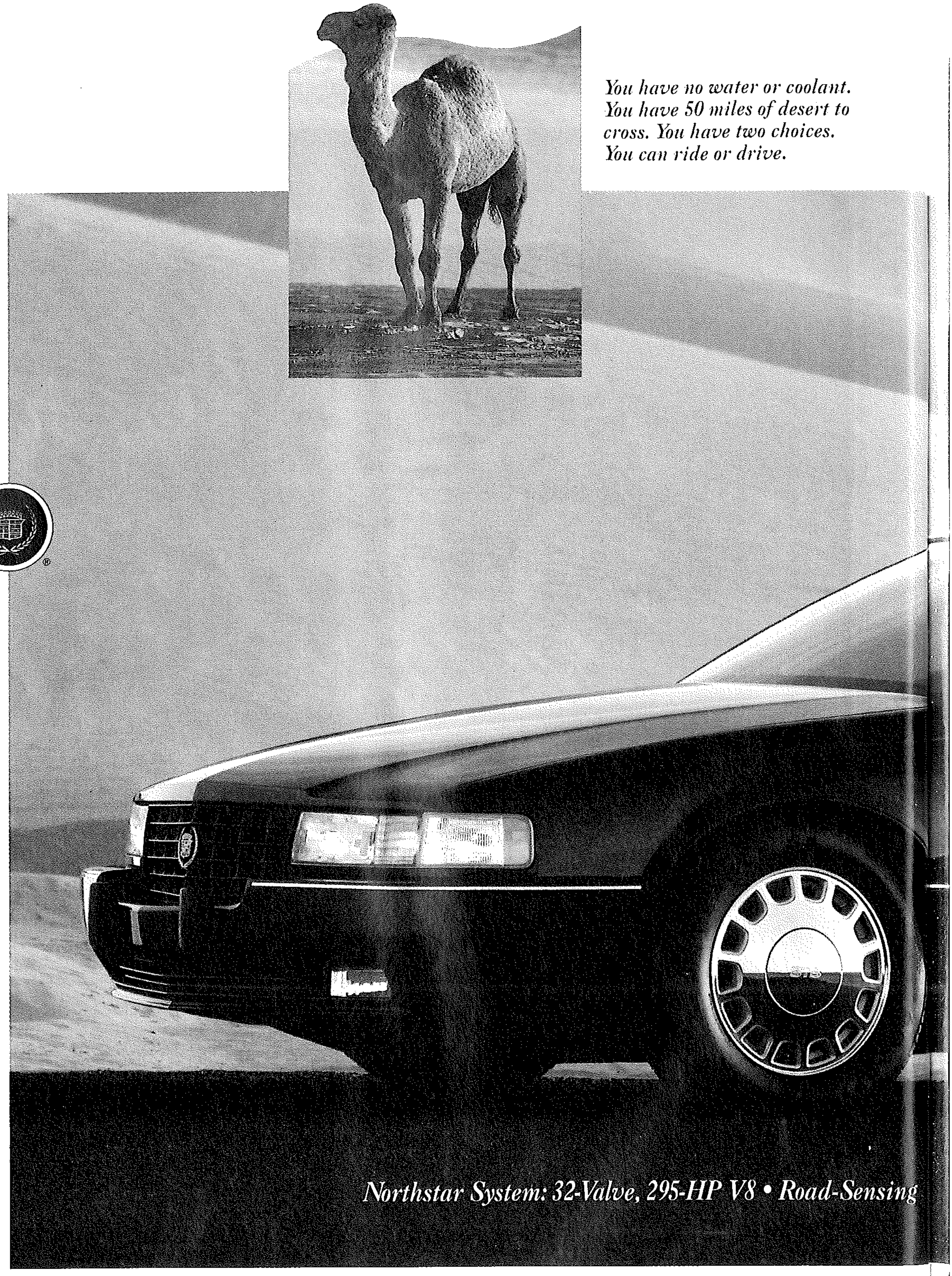
The paper trail became bumper-to-bumper, and retailers disputed more and more invoices as inaccurate billing increased in the morass. P&G treated these contested charges as accounts receivable, yet 80% of the disputes were resolved in the customers' favor. The accountants began to balk.

EDLP was shock therapy to break this cost spiral, but as the company got deeper into it, managers realized it wasn't enough. Says Artzt: "I freely admit that we were just attacking the symptoms of a broader problem."

Which was: P&G could not deliver everyday low prices without incurring everyday low costs. And P&G could not have everyday low costs unless it changed fundamentally its overmanaged organization. U.S. boss Durk Jager, a protégé from Artzt's Europe days, pushed Artzt relentlessly to break the mold.

Out of this emerged SGE, for "strengthening global effectiveness." A group of 11 teams collectively examined every part of the company. There were four rules: Change the work, do more with less, eliminate rework, and reduce costs that can't be passed on to the consumer. Says Stephen David, a vice president in charge of one of the teams: "The first thing we learned is that if you don't make the commitment to take some of your best people and pull them off line, you will not get the results." His project, originally scheduled for six to nine months with part-time participants, had to be converted to a full-time, yearlong effort.

David's team, guided by consultants from Booz Allen, spent six months benchmarking the costs of the sales organization. The team analyzed 41 work processes that the company calls its customer management system and found that Procter had the highest overhead



You have no water or coolant. You have 50 miles of desert to cross. You have two choices. You can ride or drive.

EVEN
WITHOUT
A DROP
OF ENGINE
COOLANT,
IT CREATES
A HIGHER
STANDARD.

SEVILLE STS
CREATING A HIGHER STANDARD

In almost any car, a total loss of coolant could leave you stranded. But not in the Seville STS with the Northstar System by Cadillac. Because its patented Northstar V8 is so adaptive that, if necessary for your safety, it is engineered to sense major engine coolant loss automatically. It then begins alternately firing and air-cooling its two banks of cylinders to help prevent overheating. The result: you could travel up to 50 miles–even in desert heat–without a single drop of coolant.

in the business. No wonder. Procter's sales force faced U.S. retailers with five divisions in three sales layers, selling more than 2,300 stock-keeping units (SKUs) in 34 product categories with 17 basic pricing brackets and endless permutations.

Result: The quarterly sales promotion plan for health and beauty products alone ran to more than 500 pages and was sent to every salesperson. Five P&G trucks could pull up to a retailer's dock on any day, representing five separate contacts for order verification, delivery times, and whatnot. Says Richard E. Fredericksen, an executive at American Stores, a Salt Lake City–based multiregional food and drug retailer: "There were so many levels and so many parts; to get a purchase order correct was almost an act of God."

The goal of the overhaul is to make the distribution chain linking supplier, wholesaler, retailer, and consumer more like a continuous loop. This partnering replaces the old piecemeal ordering system with continuous product replenishment (CPR)—call it Just in Tide. In this new world, when a box of detergent is scanned at the checkout, the information is transferred directly to the manufacturer's computers, which figure out automatically where and when to replenish the product. This paperless exchange minimizes mistakes and bill-backs, squeezes inventory, decreases out-of-stocks, and improves cash flow.

These improvements feed on each other. Since July, for instance, P&G has reduced the number of price changes from 55 a day to one and the number of pricing brackets from 17 to three. Improved ordering is increasing inventory turns at customer warehouses from about 16 a year to about 27, with one category, paper, doing as many as 70 turns.

Factories are humming more steadily, boosting efficiency, as P&G measures it, from 55% to over 80% companywide. North American inventories are down 10%, and manufacturing chief Gary Martin estimates that figure could double in a year. That's because only 25% of orders fall under CPR. Some outside consultants believe that at 50% CPR, savings will accelerate disproportionally.

Artzt has charged the factories to deliver products in the 1994–95 fiscal year at the 1990–91 cost. Martin says the company is ahead of the curve. One cost saver: P&G is demanding that suppliers to the catamenial (feminine products), diaper, hair care, and laundry detergent categories bid for global business. Artzt also wants P&G to get improved products to market faster, and he has never been mistaken for Job. It used to take the supply gang a tortoise-like 44 months to make a diaper change worldwide. For Pampers Phases, the calendar now reads 20 months. A recent detergent improvement was clocked at 13 months.

IMPROVED efficiency has some ugly consequences. The company can make as much detergent in four plants as it used to make in 12. It took a $1.5 billion charge against earnings in July to eliminate some 13,000 jobs worldwide, 12% of the total. P&G announced in January it will close some 30 factories around the world, including four in the U.S.

As it happens, America's packaged-goods manufacturers, wholesalers, brokers, and retailers are in the middle of an unprecedented cooperative reengineering effort to eliminate an estimated $30 billion of surplus costs caused by excess handling, paperwork, and inventory. For instance, the industry is trying to develop protocols for electronic ordering. The effort supports P&G's version of a manufacturer-wholesaler-retailer chain in which products are ordered, replenished, billed, and paid for electronically; inventories can be measured in hours rather than weeks; promotional deals are minimized; and most important, the prices consumers pay for P&G brands are competitive with store brands'.

Achieving this last part may not be easy. Retailers complain that P&G products

JUST-IN-TIDE MARKETING

P&G and retailers such as Kroger are expanding a restocking scheme called continuous product replenishment, part of an industrywide reengineering effort to make distribution more efficient. Scanner information from this store in Cincinnati (left) triggers orders at P&G (center) before the Tide

tend to provide low gross-profit margins. Reducing the price to retailers in some cases simply makes the margins decent—and now P&G wants the retailer to give them up by cutting prices to consumers. "Their overriding objective is to dominate the way these products are sold in American food distribution. I've never met a company [other than P&G] that actually hated its customers," says an unhappy food retail executive.

But other retailers are buyers. American Stores says the program has improved its sales and profits on Procter products, lowered inventory, and increased cash flow. Others are impressed with the new attitude that has accompanied the change in business strategy. Says Hugh Farrington, CEO of Hannaford Bros., a New England chain: "What has changed, and it's a significant change, is that they are working with us and we with them to look at collective businesses and look at efficiencies."

For its part, P&G owned up to the fact that many of the myriad sizes of similar items are inefficient to distribute and often unprofitable to sell when all costs are properly allocated. So Procter decided to eliminate 25% of its SKUs. Yet EDLP makes up in higher profit whatever is lost on inefficient sales. Says Blod: "EDLP gets you a 3% to 5% decrease on the cost of goods. You literally can afford a lower market share."

"We have a much better view of our own mortality. That is a great reliever of arrogance."

The overwhelming number of changes is rattling P&G's insular culture, typically described as arrogant. That's not all bad, says Artzt: "We have a much better view of our own mortality, and that is a great reliever of arrogance. When you realize that we lived with 25 years of declining shares in the hard-surface cleaner business in the U.S. [that's Comet, Mr. Clean, and Spic and Span cleansers] and with the near demise of Ivory, probably the greatest company brand, you realize there has to be some cultural change to reverse that."

Artzt isn't everyone's favorite brand of cake mix. He's hands-on, with a range that extends from advertising details to throats. "There are a tremendous number of P&G résumés on the street," says a former senior executive, now at another packaged-goods company. But even Artzt's critics admire his courage in tackling the P&G monster. Naturally Artzt prefers the subject to be P&G, and he has a point. Like him or not, he is a type of changemeister that doesn't come along often in American corporations, and his work merits a look.

Many on the inside don't miss the old days. Says Stephen David of the customer management team: "Most people haven't seen a whole lot of change in the top and middle of P&G in a long while. We had grown into the size of suits we were wearing. What happened is that this suit got a lot smaller all the way around."

THE CULTURE shift extends even unto P&G's holiest artifacts, its brands. Where once they were monoliths, the company is devising a marketing version of hub-and-spoke: fashioning megabrands of America's Tide or Europe's Ariel to defend the fortress but also applying the mother brand to flanking or extender products—Tide With Bleach, for example.

That's a big change. P&G once created a new brand for every new technology; a new formulation like Tide With Bleach would have been given a completely new name. But that strategy left the old brands open to attack. Says Artzt: "We trapped ourselves, at times, into thinking that the best way to bring new technology to the market was to bring it out as a second brand. But you don't deny it to your market leader, or you are going to lose market leadership."

The company learned this lesson the hard way in the diaper business when it developed a new shaped-diaper technology and created a new brand for it, Luvs, instead of extending its main brand, Pampers. Kimberly-Clark immediately incorporated a shaped design into its main brand, Huggies, and gave P&G a thumping. Incredibly, P&G made the same mistake with gender-specific diapers in 1987 and got further behind the curve more recently when Kimberly-Clark introduced training pants.

Similar goofs hurt Ivory soap and Spic and Span cleaner. "My greatest disappointment has been the long-term decline of Ivory, which I have been convinced was due to the fact that we didn't properly understand the Ivory concept," says Artzt. Procter believed Ivory was soap and soap was Ivory, instead of seeing it as a pure cleaning product that could retain that identity while taking on new features. Improvements such as soap with cold cream were marketed as new, unrelated brands, to Ivory's detriment.

Spic and Span has survived 45 years of share decline, a statistic that says as much about the lasting value of brand equity as about P&G's ineptitude. Last year the com-

runs out. Because orders are more predictable, the factory runs more efficiently. Good for P&G, and also for Kroger, which can get deliveries directly to the store, bypassing warehouses. Result: lower inventories, better use of cash. In food categories, consumers get fresher products too.

MICHAEL ABRAMSON (4)

PAULO FRIDMAN—SYGMA

Studies of what consumers can afford lead to lower-priced brands, like Pampers Uni in Brazil.

pany finally imbued it with modern qualities and new formulas—a Spic and Span bathroom spray cleaner, for example—and a turnaround is possible. This is why you're seeing Tartar Control Crest and Crest With Baking Soda rather than new brands of toothpaste.

Another revolutionary idea taking hold at P&G: reversing its decades-old method of creating new products. P&G used to rely on R&D to produce miracles, then priced them to cover the lab bill plus a profit and sold them to anyone who could cough up the premium. Problem: In a world economy where most of the growth is in developing nations, Procter's old model tends to keep new products out of the hands of consumers rather than in them.

Seemingly obvious solution: Figure out what consumers in various countries can afford, then develop products they can pay for. For instance, in Brazil the company recently launched a diaper called Pampers Uni, a less expensive version of its mainstream product. The strategy is to create price tiers, hooking customers early and then encouraging them to trade up as their incomes and desire for better products grow.

Aligned with the products-for-people-and-places approach is this somewhat surprising notion: P&G is globalizing. While it has long sought to make world products, the company has been slow in coordinating R&D, sourcing, and marketing strategy. Although this seems late in coming, the company is strengthening its global management matrix. In this matrix, an executive might have operating responsibility for the U.S. diaper business as well as responsibility for a global diaper strategy. The company is stressing regional management over country management. In South America a regional matrix focused on customers has replaced a country-by-country structure. Executives say this matrix can handle twice the business it is now doing with the same staff.

The aim is reasonable enough: When Procter gets its hands on an innovation or a product with global potential, rolling it out quickly worldwide is important. Artzt is particularly proud of Procter's record with Pantene, a shampoo that zoomed to $700 million in global sales from about $50 million in 1985.

With the additions of Max Factor and Betrix, a leading European brand, to its Cover Girl brand (purchased with Noxell in 1989), Procter has become an international power in mass-market cosmetics. There will be no withholding of beauty secrets. A longer-lasting lipstick developed by Noxell, for instance, will be available to all three brands simultaneously, even if packaging and colors reflect local tastes. At P&G the process is called "search and reapply."

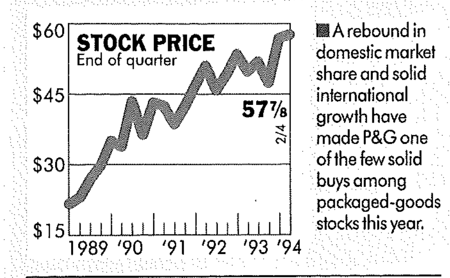
Procter's grand plan still has some holes. The U.S. diaper business is struggling despite three price cuts in the past year. "We'll have it right in 12 to 18 months," says Durk Jager with confidence. P&G recently introduced training pants to compete with Kimberly-Clark's Pull-Ups and promises a new product come fall. The cosmetics business has some blemishes too—the company recently killed the Clarion brand.

Industrywide, competitors have zeroed in on Procter's shrinking promotional pool and one-size-fits-all program. A recent Lever Bros. ad in *Supermarket News* promised, "We know every customer is different. And every market unique"—a not-so-veiled attack on P&G's new pricing strategy.

RETAILERS SAY P&G is about two-thirds of the way home on EDLP. The company still needs lower prices on some products and better coordination on ordering. Even if P&G doesn't get there, the journey will have been worth something. Says Artzt: "You've got to envision the risk in staying where you are. If we don't change, we are going to decline. And any decline in an institution is a threat to its survival."

P&G's main competitors, Unilever, Nestlé, and Colgate-Palmolive, are sticking with a system of highly autonomous divisions and varied pricing. This raises a question: If P&G's overhaul is successful, will it compel the rest of the industry to follow? Says Gary Stibel of New England Consulting: "People underestimate the commitment and conviction behind P&G's business strategy. But next year some companies are going to realize that P&G may have given itself a significant advantage longer term." And then it will be the other guys' turn to re-create themselves. If they can.

PROCTER & GAMBLE
Cincinnati



SALES (latest four quarters) Change from year earlier	**$30.1 billion** Down 1.0%
NET PROFIT	**$606.0 million** Down 30.7%
RETURN ON EQUITY	**7.3%**
TOTAL RETURN TO INVESTORS 1/31/89–1/31/94 (annual rate)	**23.9%**
PRICE/EARNINGS MULTIPLE	**78.2**
DIVIDEND YIELD	**2.1%**

FORTUNE CHART / SOURCES: COMPANY REPORTS, WORLDSCOPE

WITH A CD, THE SENSATION GROWLS, SHAKES *and* SNARLS. BUT WHERE YOU BUY IT WON'T SCARE YOU.

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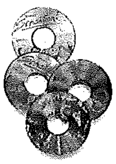

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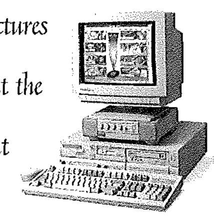

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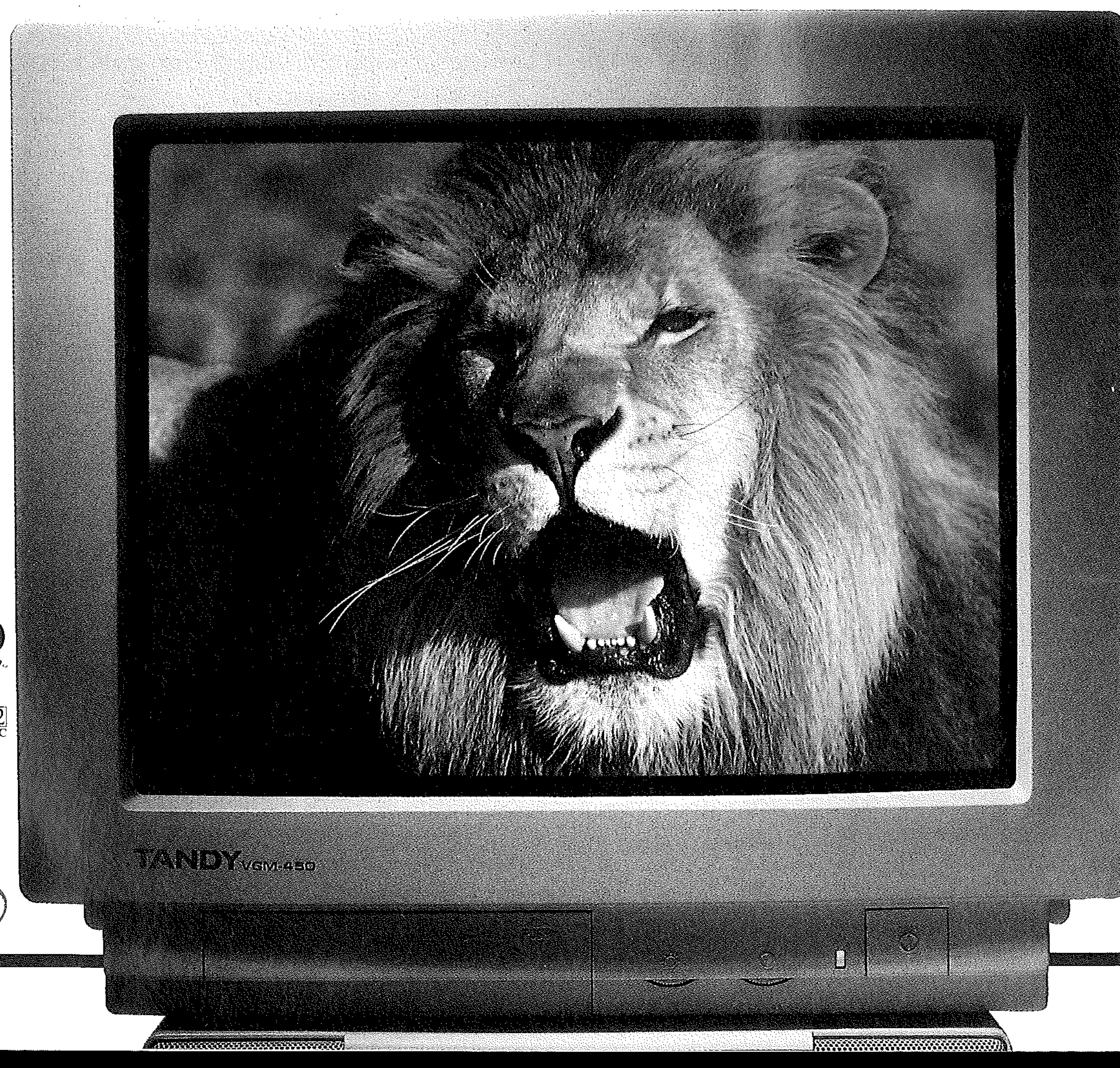

Photo CD

MPC2 Multimedia PC

Microsoft Windows

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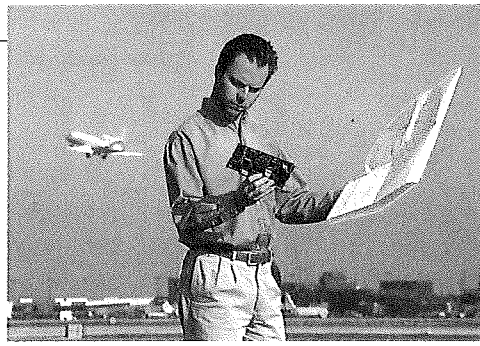
COMPANIES TO WATCH

BY JOHN LABATE

MADGE N.V.


PENNI GLADSTONE

Airlines book flights with Madge network boards.

Not many companies grow up to be multinationals, but Madge N.V., which develops hardware and software for the computer networking market, was designed as one from the start. Instead of operating from a single headquarters, Madge has four business and research centers, in San Jose, London, Tokyo, and Hong Kong. "Because we began in the relatively small English market, we had to think globally right away," says founder and CEO Robert Madge, who started the company in 1986. Madge is incorporated in the Netherlands, and about 45% of its sales are outside North America.

Madge designs all its networking products using a standard known as token ring. Most computer networks operate on either a token ring or an ethernet system. Both systems control the flow of communications and data between computers on a network, but token ring was developed by IBM in the mid-1980s to improve the handling of large volumes of transactions. Typical users include banks and airlines. IBM dominates the token ring market, with a 60% to 70% share; Madge is second, with about 10%. It has managed to steal away some large corporations from IBM by introducing a steady stream of high-speed product enhancements and new token ring designs. NationsBank and Mazda both defected from IBM to Madge.

Madge's products include the hardware that links computers to a network—such as adapter boards, wiring hubs, and routers—as well as the internal software. Frederic Cohen, a senior technology analyst at Ladenburg Thalmann & Co., expects 1994 net income to rise 53%, to $26 million, on a 52% surge in revenues, to $221 million. The stock traded recently on Nasdaq at $12.88, or 16 times Cohen's estimate of 1994 earnings per share. Robert Madge holds 73% of the shares.

Madge does most of its research at its English site, which coordinates worldwide product development. The R&D done in the U.S. and Japan involves software sold for specific applications in those countries. Madge's newest center, in Hong Kong, is just starting its own product research. Later this year the company will introduce a new line of networking hardware and software for the multimedia market. Using technology known as asynchronous transfer mode, or ATM, the products will move data even faster than token ring and will transmit video images.

PEOPLESOFT

Designing software for the human-resources market may not sound very exciting, but PeopleSoft knows a good business when it sees one. The company, in Walnut Creek, California, sells its products to large and midsize companies. Each of its five packages helps manage a specific administrative function, such as employee benefits, payrolls, and flexible spending claims. Hewlett-Packard, a major customer, chose PeopleSoft products to handle hiring, wage, and performance data on employees at headquarters in Palo Alto. Other customers include Monsanto and American Express.

In an attempt to expand into other profitable niches, in 1992 the company began selling a second line of software designed for financial applications, including asset management, accounts receivable, and accounts payable. The financial software is now the company's fastest seller and contributes 28% of revenues. Franklin Michnoff, an analyst at Prudential Securities, expects net income in 1994 to increase 40%, to $11.8 million, on a 63% surge in revenues, to $95 million. The stock traded recently on Nasdaq at $31, or 34 times Michnoff's estimate of 1994 earnings per share. Overseas sales contribute about 17% of PeopleSoft's total revenues.

CHICO'S

Each year Chico's picks a new theme for its casual women's clothes—ethnic, floral, Southwestern—and then produces them in a range of styles, colors, and sizes. The company, in Fort Myers, Florida, targets 30- to 55-year-olds, to whom it sells a full line of exclusively made private-label clothing, jewelry, and accessories. "We do not chase trends," says CEO Jeffrey Zwick. "We focus on a wardrobe, and everything in the store coordinates." Chico's does its own pattern designing in Florida and contracts the manufacturing to companies in Turkey, Guatemala, and elsewhere overseas. It has 94 stores in 26 states, with a heavy concentration in Florida and California.

The company, which began in 1983, plans to open at least 22 new stores this year. Paul Shain, an analyst at Robert W. Baird & Co., expects 1994 net income to rise 33%, to $6.4 million, on a 37% increase in sales, to $64 million. The stock traded recently on Nasdaq at $12.75, or 16 times Shain's estimate of 1994 earnings per share. Most of Chico's clothes are cotton, but it expanded recently into silks, wools, rayons, and linens. The company franchises 16 of its stores. F

Earth tones and ethnic prints are all the rage at Chico's this year.

BILL WAX

THE INTERNET AND YOUR BUSINESS

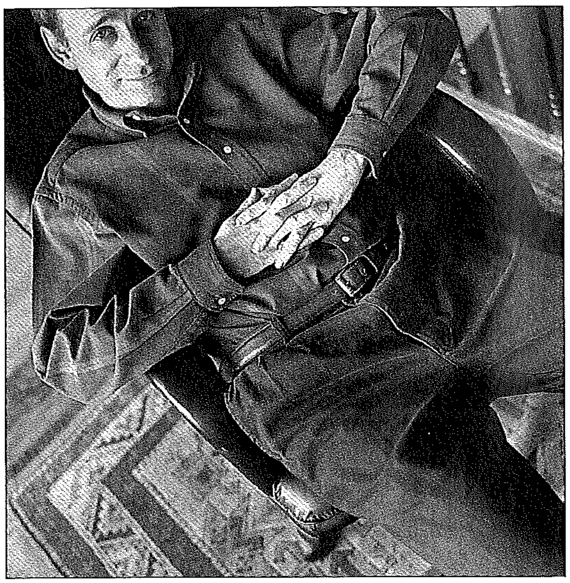
Companies like GE, IBM, and J.P. Morgan are on the Internet, that web of 25,000 computer networks connected worldwide. You should be there too. Here's what to expect. ■ ***by Rick Tetzeli***

CALL 1993 the year of the announcement. Ambitious corporations bellied up to the publicity bar, bragging about the billions of dollars they would spend delivering something called the "information superhighway," which will arrive at your doorstep in 1995 or 1996 or 1997 or 1998 . . . .

Meanwhile, a surprisingly wide range of other companies, including General Electric, IBM, J.P. Morgan, Merrill Lynch, Motorola, Schlumberger, and Xerox, are making use of the information highway that already exists: the Internet, a global web of 25,000 computer networks. The Internet is more than a two-lane version of the "real thing." While the information superhighway generated only publicity last year, the Internet more than doubled in size—an estimated 20 million people now have access. According to Anthony Rutkowski, vice president of the Internet Society, a volunteer group that promotes Internet use, three-quarters of that growth came from newly registered commercial networks. Of the networks registered worldwide, 63% belong to businesses or their research labs. The next category, with 10%, is university labs.

So companies are signing on, and fast. But why? After all, the Internet is difficult to negotiate, because you generally need to know commands in Unix, computer software familiar mainly to researchers and nerds. Information is hidden away in news groups with strange names like *comp.humanfactors* or at network locations like *wuarchive.wustl.edu*. There's no comprehensive directory and less privacy than you'd like—certainly not enough to safeguard sophisticated financial transactions.

What's more, nobody really runs the thing. The Internet's lack of a command center reflects its origin, in 1969, as a Defense Department network designed to survive nuclear attack. Rather than route messages through central (and therefore bombable) control points, the network makes use of thousands of computers linked by thousands of different paths. Each message carries an address that lets any of the computers forward it toward its destination. Messages usually arrive in seconds, but on rare occasions they vanish into cyberspace; their senders have little choice but to try again. Says Ken McGee, a vice president with the Gartner Group consulting firm in Stamford, Connecticut: "When something goes wrong on the Internet, what are you going to do? Call 1-800-Al-Gore?"



JAMES GLEICK / THE PIPELINE
■ **The author of *Chaos* is helping to bring order to the Internet with software that makes it easier to use.**

But connecting your corporate network to this high-tech maelstrom is neither foolery nor faddishness. Mary Cronin, a Boston College professor and author of the book *Doing Business on the Internet*, says there are short-term and long-term reasons for hooking up: "Businesses want the Internet to provide *x*, *y*, and *z* right away. It can. But the most compelling argument for connecting is that the Internet is the biggest and earliest manifestation of the way business is going to be conducted from now on. Networked information and communication are the standard for the future."

Companies testing the waters boast of increased productivity, better collaboration with strategic partners, and access to what is in essence the world's largest public library for a seemingly infinite range of information. But the Internet is virgin territory when it comes to true commerce. While start-up companies are experimenting with interesting forms of electronic marketing and advertising, most large companies have just begun to see the Internet as a potential marketplace.

James Gleick, the author of *Chaos*, a best-seller about the history and meaning of chaos theory, supplies businesses and consumers with access to the Internet via a new service in New York City called the Pipeline. "This is an exploding trend," he says. "It's as if every business in the world woke up yesterday and saw this great universe out there. They all want in, even if they don't know what it means." Forget the hype for a moment. Here's a look at what it means to be on the Internet today.

■ **ELECTRONIC MAIL:** Most of the corporate traffic that crosses the Internet is E-mail; being able to zap messages to a computer anywhere in the world is a big reason for getting on. Says David Sims, director of the information network at Schlumberger: "I hardly use the telephone

PHOTOGRAPHS BY CHRIS BUCK

DAVID SIMS / SCHLUMBERGER

This satellite dish in Sedalia, Colorado, is at the heart of Schlumberger's network, which reaches installations in 35 countries and the Internet.

anymore." When contacted via Internet E-mail for this story, Sims responded in kind: It was more convenient than trying to link up by phone from his hotel in Islamabad, Pakistan.

Other corporate users are equally devoted. Mort Meyerson, CEO of Perot Systems, sends and receives more than 7,000 Internet E-mail messages a month. IBM employees exchanged 580,000 messages with outsiders in January. Researchers at GE's corporate R&D division send and receive 5,000 messages a day. Ronald Richard, a senior executive in Panasonic's U.S. R&D operation, uses E-mail to stay in touch with seven U.S. labs, many of his suppliers and customers, parent company Matsushita's Japanese labs, and his secretary, who's 20 feet from his desk. Says Richard: "We make fax machines, so I'm a little ambivalent about saying this, but E-mail is more secure because it doesn't just lie around the office, and it saves you the added step of having to go pick it up. Fax won't be replaced, but in ten years there won't be many companies that don't have every single employee with E-mail on the Internet."

Businesses go to great lengths to make their networks compatible with TCP/IP, the Internet standard for addressing messages and sending data. Paul Weekes, Motorola's director of information technology management, has masterminded a sweeping five-year effort to build a high-speed backbone for Motorola's internal networks and make all communications Internet-compatible. The result is that E-mail runs seamlessly inside and outside the company. Weekes, for example, uses a Next workstation, and his E-mail can be read by any recipient with a Macintosh or PC.

AMANDA WALKER / INTERCON SYSTEMS

"Net Goddess" Walker is a cybermarketer and Beauregard is a hyacinth macaw.

According to Sims of Schlumberger, the thread that connects the halves of his $6.8-billion-a-year company—oil and gas services and the manufacturing of gas and water meters—is the acquisition and exchange of information. Twenty thousand of Schlumberger's 50,000 employees routinely use E-mail, and many depend on the Internet to communicate with customers, suppliers, and university researchers. Demand is so great that in 1992 Sims had to expand the company's direct line to the Internet to handle 12 times as much volume.

COLLABORATION: When IBM does development work with other companies, its engineers often use the Internet to communicate with their counterparts rather than set up a private link. Says Nick Trio, IBM's Internet "postmaster," who maintains the company's network connection: "To be technologically vital these days, you have to be on the Internet." Software engineers in Hawthorne, New York, for example, are collaborating with developers at Bellcore in New Jersey. Instead of driving to one another's labs, the researchers use the Internet to log on to a shared workstation at Bellcore.

Clearly, there's risk in linking your corporate network to the public world of the Internet. Companies take elaborate precautions, most often by setting up special workstations as buffers. These so-called firewalls vet incoming messages and make sure that an outsider authorized to access a certain computer in the company doesn't roam anywhere else or leave software that records confidential information, such as people's passwords. At IBM, traveling employees are issued smart cards that identify them to the firewall. IBM tests the security system annually, challenging its own programmers to ferret out problems. Last year only one employee found a bug; he won a book on Unix programming. This year Big Blue is really putting out: Anyone who finds a bug wins a $150 dinner for two. But since 145 attempts so far have failed to crack the system, Trio says he should be entitled to the prize.

No one doubts that collaboration via the Internet will increase. GE's Greg Casagrande, information systems manager for corporate R&D, thinks speedier connections will make sharing multimedia—text, graphics, video, and audio—the norm. As network capacity increases, says Casa-

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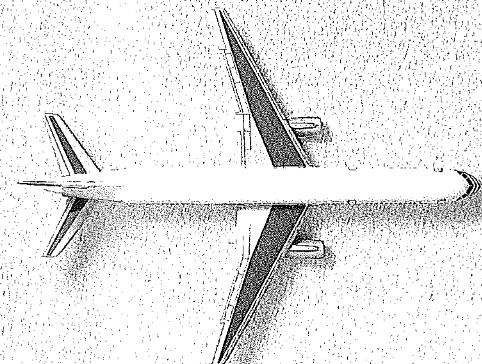
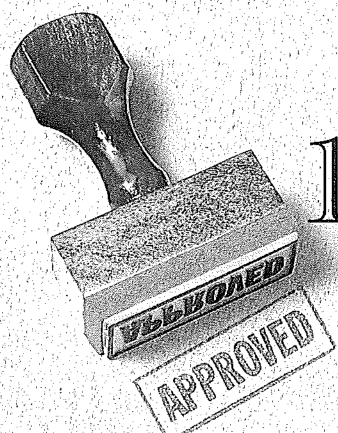
140 Airlines.





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grande, it will be easier for doctors at hospitals with Internet connections to consult faraway specialists by transmitting 3-D brain scans that can be rotated and examined onscreen. That could help spur business for the GE unit that makes scanners.

■ INFORMATION GATHERING: Try as you may, you cannot imagine how much data is available on the Internet. Brian Johnson of White Plains, New York, is a so-called Internet guide who earns $100 an hour teaching corporations to navigate and mine the Net. Says he: "I remember standing in my backyard in Arkansas as a kid, watching a satellite go by. Now I can pull down a photo that was made by a satellite 30 minutes after it's taken." NASA stores such photos in digital format on a computer that anyone on the Internet can access.

GREG CASAGRANDE / GENERAL ELECTRIC

■ He helps corporate researchers use the Internet to stay in touch with colleagues at hospitals that operate GE scanners.

Thousands of Internet news groups and E-mail lists are filled with experts discussing their fields. There are groups on chemical engineering, Middle Eastern politics, semiconductor manufacturing, and education (and on pets, movies, sex, cooking, humor, and the Boy Scouts). Users can tap into computers from institutions as diverse as the Nasdaq, the Federal Reserve, and the Library of Congress.

That's the good news. Says Pipeline's James Gleick: "When I first discovered the Internet, it was like a whole new world opening up." But he adds: "It was horrifying how difficult it was." Imagine doing research at a vast archive with thousands of incomplete catalogues and no librarian.

Gleick is one of a few entrepreneurs striving to make the Internet more accessible. Pipeline subscribers get PC software that eliminates the need to learn mind-numbing commands like *ftp ftp.eff.org*. (It means "I'm interested in retrieving files offered by the Electronic Frontier Foundation.") Instead, subscribers can get started on the Internet with the help of point-and-click graphics that resemble the familiar Windows interface.

The big breakthrough in making the Internet navigable is a more versatile program called Mosaic. Developed at the National Center for Supercomputing Applications (NCSA) in Champaign-Urbana, Illinois, and distributed free to any Internet user who requests it, Mosaic lets people click and point their way to the information they want via something called the World Wide Web. Like a multimedia encyclopedia, the

STRAIGHT TALK ABOUT THE INTERNET

What is the Internet?

The Internet is a loosely configured, rapidly growing web of 25,000 corporate, educational, and research computer networks around the world. It evolved from an R&D communications network created by the Defense Department in 1969 and designed to survive nuclear war. The Internet has no central computer; instead, each message you send bears an address code that lets any computer in the Net forward it toward its destination.

Who manages it?

"There is no Internet Inc.," writes Ed Krol, author of *The Whole Internet Catalog & Users Guide*. The closest thing to a governing body is the Internet Society in Reston, Virginia. This volunteer organization, with more than 2,000 individual and 84 corporate members, promotes Internet use and oversees development of new communication protocols.

Isn't the Internet noncommercial?

Portions are. The National Science Foundation Network, which is the main artery for research and education traffic, bans commercial data. Companies that market Internet access generally make sure customers' data pass through privately owned segments of the Net.

How do I get on?

Anybody with a computer and a modem can get on the Net for around $20 per month, plus phone charges, by subscribing to a gateway company like the World in Boston. For corporations that want to connect their network to the Internet, providers like Global Enterprise Systems in Princeton, New Jersey, lease dedicated lines. Such a setup, including a "firewall" computer for security and software to ensure that your network meshes with the Internet, costs $50,000 and up, not counting the expense of personnel to maintain the connection. Howard L. Funk, an ex-IBMer who pushed Big Blue to get on the Internet, says the company spends about $2 per user per month.

Will I hit electronic traffic jams?

Traffic is part of life. So many people are joining dial-up services like America Online, whose offerings include E-mail access to the Internet, that you sometimes get a busy signal. On the Internet itself, jams occur when thousands of people simultaneously try to tap into a particular computer, such as one in Illinois that offers free copies of popular Mosaic software. Congestion is also likely in data transmission circuits. Providers are rushing to add capacity; whether they'll keep pace with demand is uncertain.

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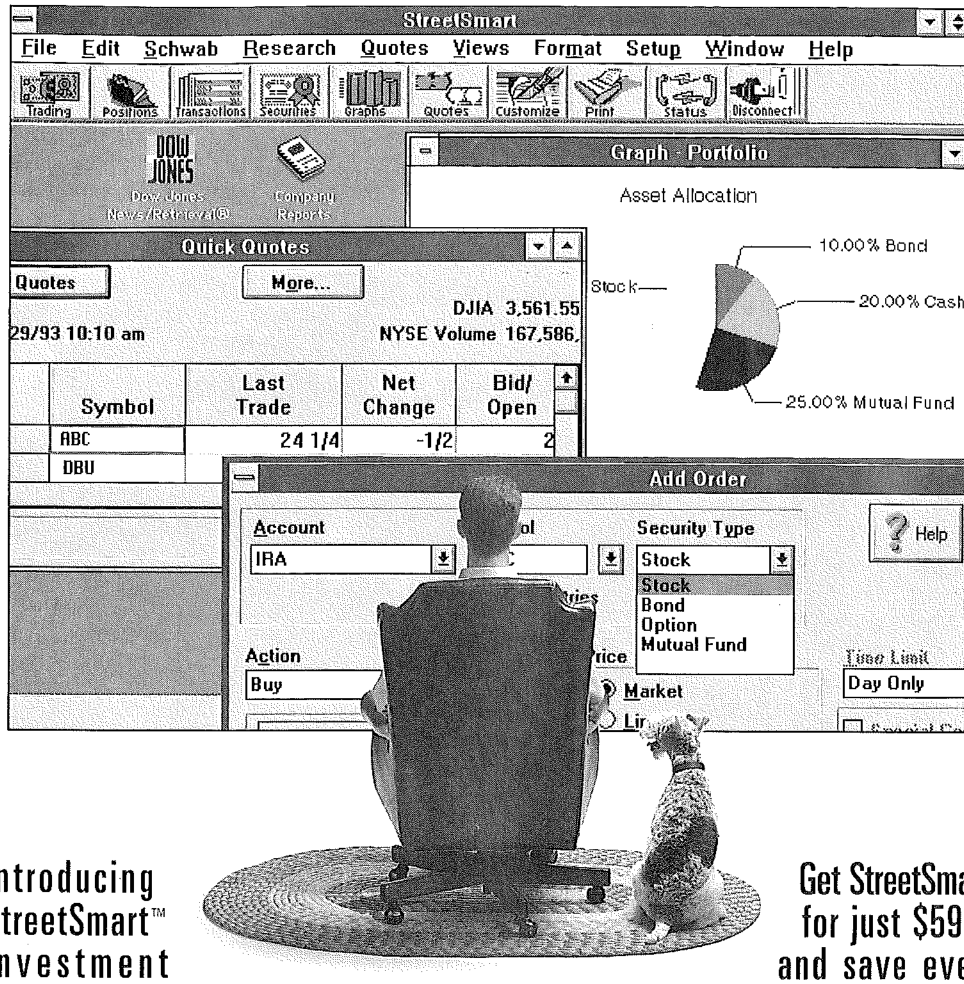

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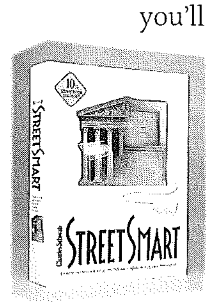

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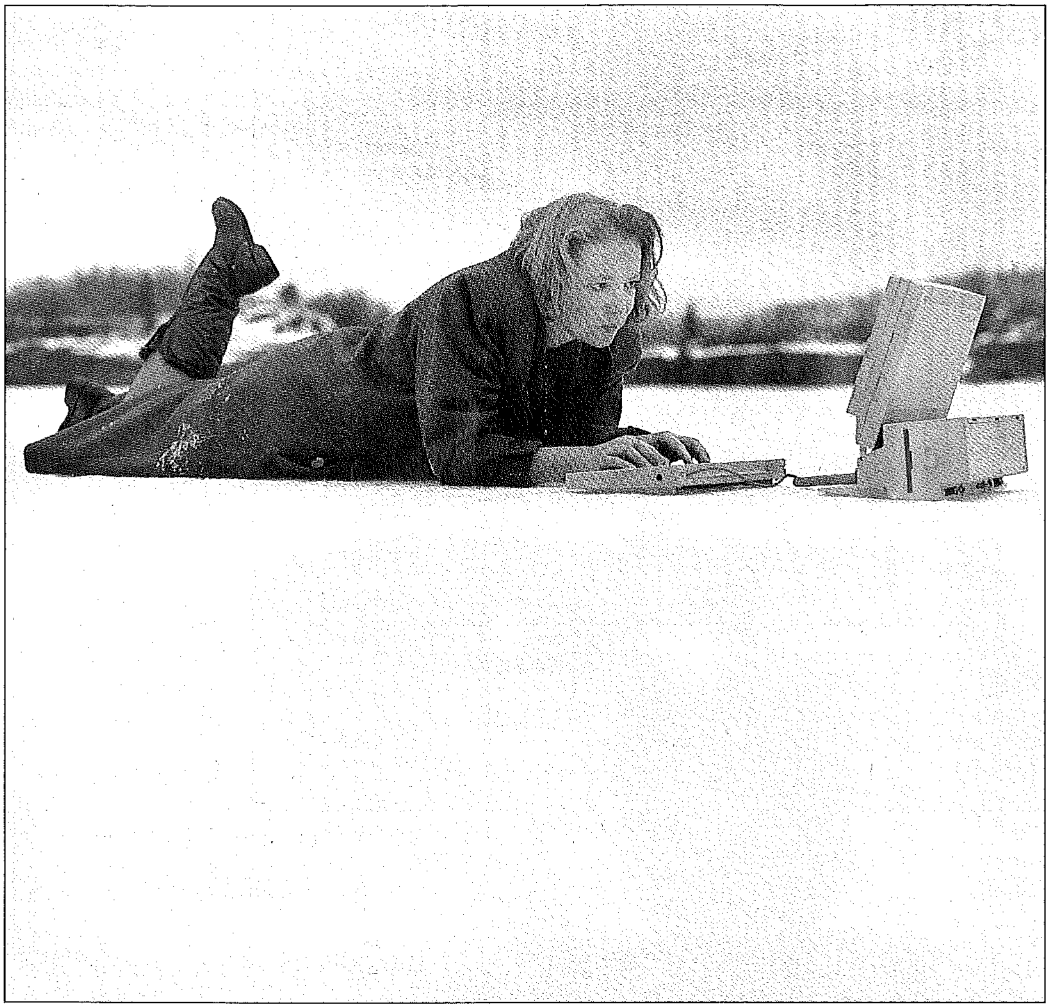


LAURA FILLMORE / ONLINE BOOKSTORE

Through Fillmore's store, you can get books like *Sex: An Oral History* delivered into your computer.

Web, which was developed by researchers in Geneva, Switzerland, consists of disparate files and directories spread throughout the Internet and connected with so-called hypertext links. By clicking on "koala" in one electronic document, for example, a Mosaic user might connect to a computer with more information in Sydney, Australia. A few more clicks, and you're perusing files and photos stored digitally in that machine.

Anthony Rutkowski of the Internet Society calls Mosaic "the Internet killer application"—software that will make the Net indispensable, just as Lotus 1-2-3 did the IBM PC. When Mosaic's developers introduced Mac and PC versions in November, the NCSA was swamped with some 10,000 takers per week. Many Internet habitués blame the use of Mosaic for the traffic jams that occasionally slow communication on the Net.

At J.P. Morgan, Peter A. Miller, managing director and co-head of technology, and David Spector, a vice president, are using Mosaic to make Internet accessible to every employee. What on the Internet can bankers possibly find of interest? Here are just a few examples, drawn from the *Internet Letter*, published by Jayne Levin in Washington, D.C.: SEC filings, Commerce Department data including requests for bids and Census Bureau information, new patent titles, stock market updates, and the trade journal *Nasdaq Financial Executive*. Another resource: professors, who increasingly publish and take part in discussion groups on the Net.

Asked if J.P. Morgan conducts financial transactions on the Internet, Miller recoils in horror. Financial firms linked to the Internet, such as Morgan and Merrill Lynch, have a group that discusses networking issues, but using the Net for trading or other financial transactions is years off. "Put it this way," says Miller. "You'd rather pay your bills over it than receive your paycheck over it."

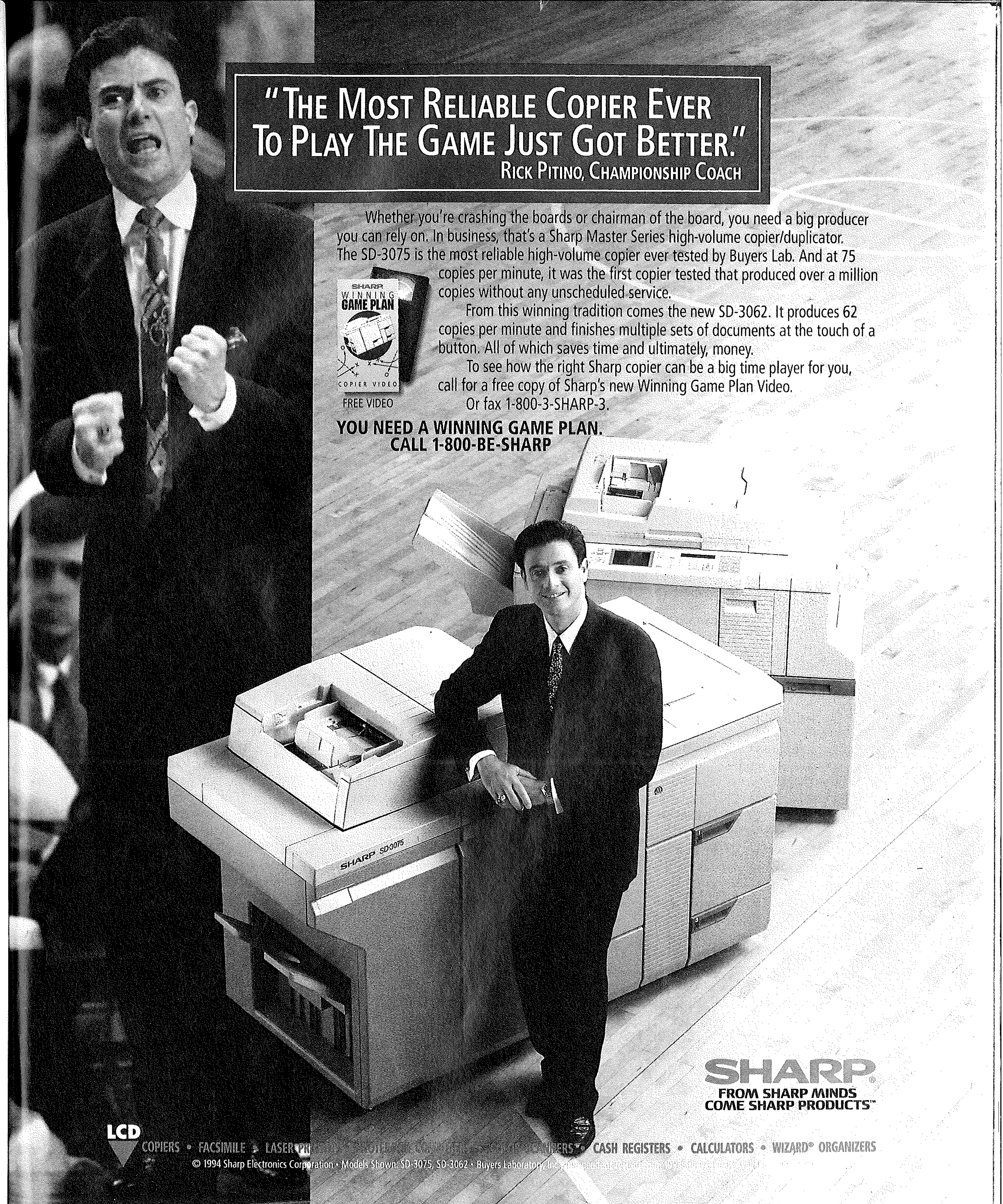
DIRECT MARKETING: You can just imagine the direct-mail crowd licking its lips at the prospect of the Internet: 20 million people who have sorted themselves into interest groups, from theologians to auto repair hobbyists. Better yet, distributing junk mail electronically is lots cheaper than via "snail mail" (the U.S. Postal Service).

So why not barrage these consumers? Because they can answer back. Says Apple Computer postmaster Erik Fair: "A traditional junk mailing is successful if it gets a response rate of 2% or 3%. On the Internet, you'll get 100% response. And 99% of it will be 'Don't you ever do this to me again!' " Catalogue companies that have sent material to potential customers in Internet groups have been so heavily barraged by negative feedback that they have promised not to do it again.

InterCon Systems, in Herndon, Virginia, is perfecting a less intrusive approach that vice president Brian Lichorowic calls cybermarketing. The company, a maker of Internet software for PCs and Macs, has a reputation for providing excellent customer support via the Net. Most InterCon developers spend several hours a week tracking news groups on computer-related topics. They'll respond to any posted query they can answer—whether or not the question, or the answer, has anything to do with InterCon products.

Around the office, developer Amanda Walker is known as the Net Goddess. She gets fan mail about her postings, which are calm, smart, and refreshingly free of technobabble. One man liked her style so much that he said he'd even be eager to read her description of how to boil an egg. Walker says her popularity helps win customers: "This works kind of like show business or sports marketing. Personal impressions and endorsements carry a lot of weight." InterCon's sales have more than doubled in each of its five years of existence.

Another form of electronic marketing is



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catching on among larger companies. Apple, Bell Atlantic, IBM, Schlumberger, and Silicon Graphics operate special computers, known as servers, that make available product information, press releases, E-mail directories, and financial data. Digital Equipment goes a step further. It has hooked two of its new high-performance Alpha computers to the Internet and lets people test-drive the systems remotely by running their own software on the machines. Over 2,500 potential customers have logged on during the past six months. Says Gail Grant, who manages the servers: "Customers love the program because there's no salesman breathing down their necks."

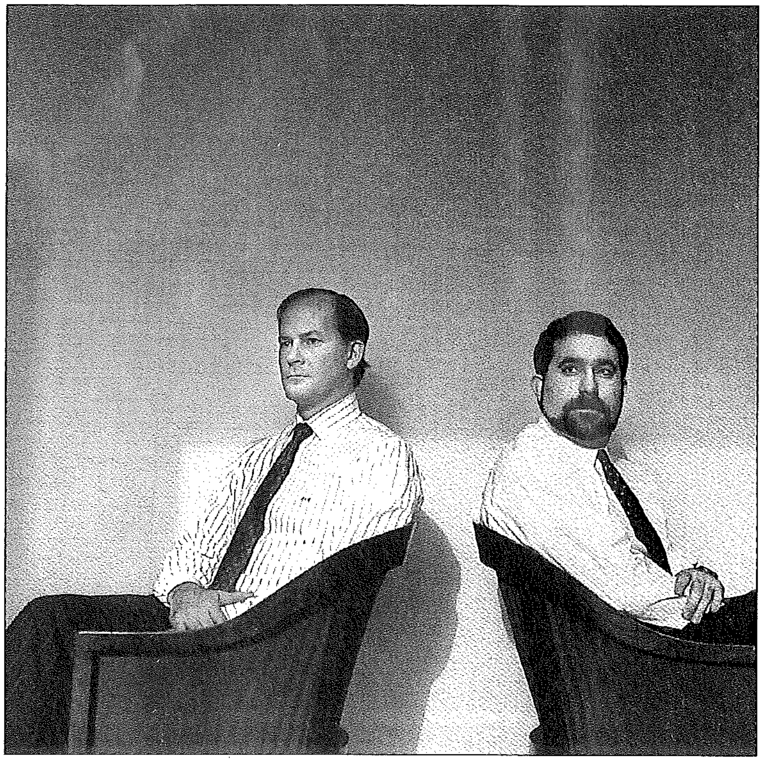
She came up with this vision for marketing in the high-tech Nineties in true Nineties fashion, sharing beers one afternoon with coworkers in a Palo Alto microbrewery. The return on investment is dramatic: DEC has sold $5 million of Alpha systems to people who tried them on the Internet.

ADVERTISING: Some Internet denizens think ads will ruin the neighborhood. An electronic publication zipping around the Internet is the *Adbusters Quarterly.* Its mission? "We will take on the archetypal mind polluters—Marlboro, Budweiser, Benetton, McDonald's, Coke, Calvin Klein, Whittle—and beat them at their own game. We will uncool their billion-dollar images with uncommercials on TV, subvertisements in magazines, and anti-ads right next to theirs in the urban landscape."

Whatever. Most publishers of electronic media acknowledge that just as in the print world, they'll need advertising to subsidize their operations. O'Reilly & Associates, a computer-book publisher in Sebastopol, California, is furthest along in testing how much advertising the Internet will take.

O'Reilly offers a free service called the *Global Network Navigator* on which users encounter two forms of ads. When they call up GNN on their screen, they see a table of contents with a number of headings, including "GNN Marketplace." Clicking on that, they'll find ads from DEC, the San Francisco law firm Heller Ehrman White & McAuliffe, and Hand in Hand, a children's catalogue retailer in Oxford, Maine. Readers who click on one of the names get further information, like Hand in Hand's on-line offerings of toys, strollers, and cribs.

Users who select the heading "GNN Magazine" find advertising that's more like what they're used to in the print world. The magazine is a quarterly featuring over a dozen Internet-related features that include graphics and the equivalent of a few pages of text; above each headline runs an advertiser's banner. The sole advertiser in the current issue is MIT Press, and the ad simply reads, "MIT Press: *Schools for Thought*, by John T. Bruer." By clicking on the banner, interested readers can learn more about the book, a tome on education, and how to order it. It costs $29.95. But readers who aren't interested have to live with the banner.



PETER MILLER AND DAVID SPECTOR / J.P. MORGAN

Even blue chips get the news: Morgan employees use a navigational tool called Mosaic to plumb the hidden resources of the Internet.

A few hardy entrepreneurs have already opened virtual shops on the Internet. At the address *marketplace.com*, customers can browse through Laura Fillmore's Online BookStore, based in Rockport, Massachusetts; for a fee, they can have books like *The Internet Companion* or *Sex: An Oral History* delivered electronically to their home computers. Fillmore handles payments by asking customers to type in a credit card number. Initially, she says, she had a tough time attracting ordinary readers; her best customers were network providers like EUNet in Amsterdam that license the books and offer them free to subscribers. But she is as tenacious as any real-world shopkeeper: "Eighteen months ago I told myself there was a business here. I'm still telling myself the same thing."

Malls may spring up on the Internet. MecklerMedia, a Westport, Connecticut, publisher of trade journals and organizer of Internet-related conferences, plans to unveil an ambitious commercial space later this year. The so-called MecklerWeb would offer users a menu of services from established trade groups. Say you need a divorce lawyer. You could log on to MecklerWeb, click on the Law option, and get free information on your state's divorce laws from Cornell University's Legal Information Institute, which has already signed on. Returning to the Law menu, you could compare brochures and prices from competing firms.

The experience would be like comparison-shopping at the mall. MecklerMedia plans to operate as both mall owner and system coordinator, helping businesses put their information on the Net. Says general manager Chris Locke: "Right now companies have to devote five man-years to finding out whether the Internet is an opportunity or a rat hole. We want to make the Net a whole lot easier to discover."

That sort of attention to what businesses need is new to the Internet, whose complexity and interactive chaos are still enough to put off most managers. But if you want to be competitive in the networked world, better to jump in than to wait for some "information *super*highway" to reach your front door. There's a highway on your desktop right now. Get on it. F

Rick Tetzeli's E-mail address is rtetzel@pipeline.com.

THE NETPLEX
IT'S A NEW SILICON VALLEY

The world's most important growth industry links everywhere to everywhere. But the people building the electronic highway work just down the road from one another. ■ ***by Thomas A. Stewart***

AMERICA'S hottest industry has staked out a place on the map. New York was Radio City; so many machine-tool makers once lined the banks of the Black River in Springfield, Vermont, that the area was known as Precision Valley. Some businesses get married to a place and take its name: Detroit, Hollywood, Savile Row, Wall Street. But with all the horn blowing that goes on in Washington, D.C., the area's transformation into a great center of technology for the next century has been little noticed, and till now unnamed.

Call it the Netplex. Begin at the Pentagon and draw a line west to Dulles Airport; then north to Rockville, Maryland; east through Maryland to the town of Greenbelt; and back down into Virginia to the Pentagon. Within that area, about 20 miles square—a parallelogram, more like—lies the crossroads of the electronic superhighway.

Washington-area corporations lead the world in building and managing high-speed data communications networks—an industry into which tens of billions of dollars will pour to build an information infrastructure. In the U.S., only Silicon Valley has more high-tech companies. Netplex businesses outnumber those along Massachusetts's Route 128 and leave the Research Triangle of North Carolina eating its own red dust. In the Information Age the importance of the Netplex will only increase. Its companies—many of them obscure now—

REPORTER ASSOCIATE *Joyce E. Davis*

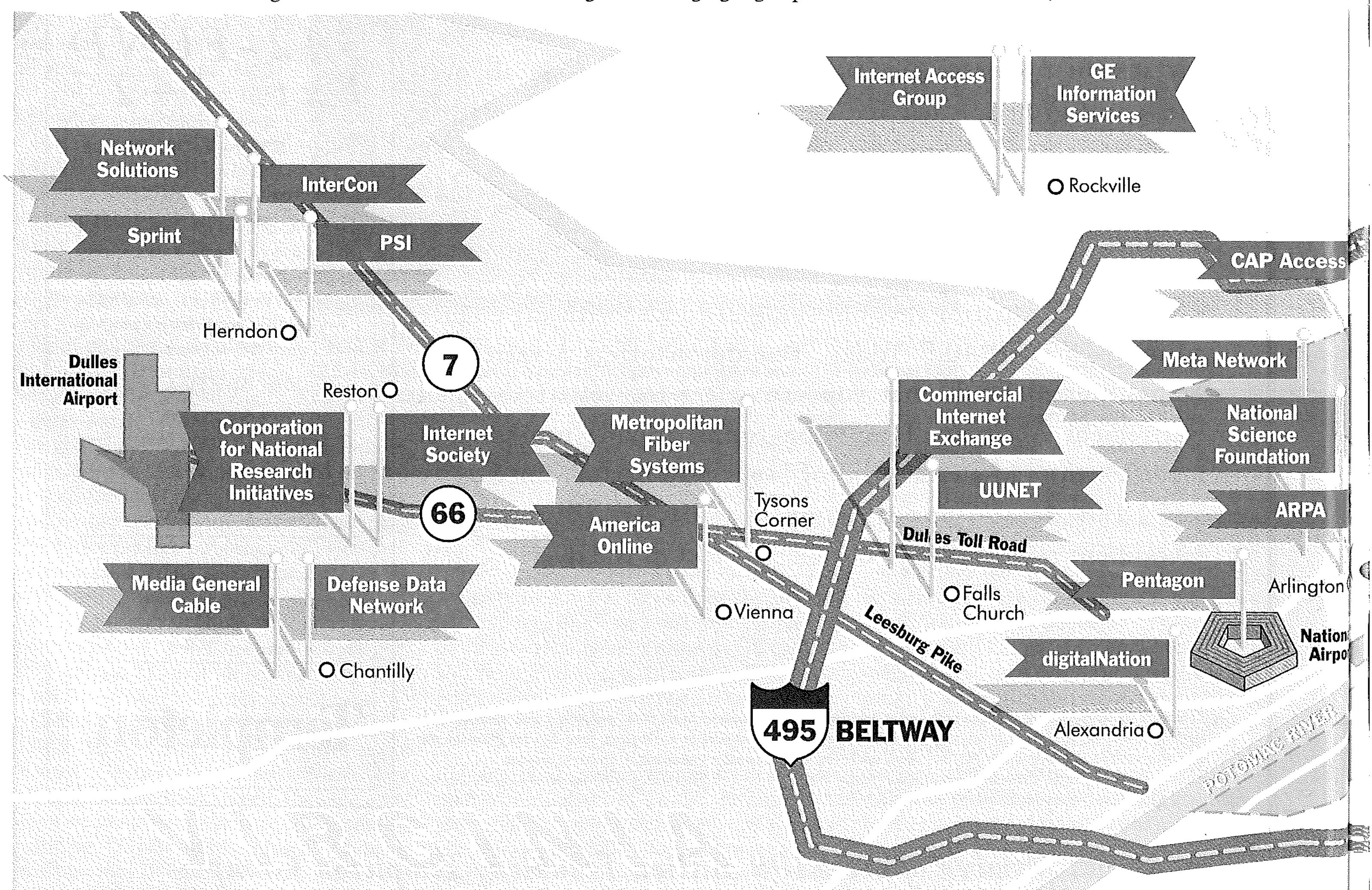


ILLUSTRATION BY TONY MIKOLAJCZYK

TECHNOLOGY CENTERS

	Number of companies
Silicon Valley California	**1,845**
The Netplex Washington, D.C., area	**1,206**
Boston and Route 128 Massachusetts	**1,160**
Research Triangle North Carolina	**241**

FORTUNE TABLE / SOURCE: WASHINGTON TECHNOLOGY

could be the AT&Ts or RCAs of the future, their leaders its Theodore Vails or David Sarnoffs.

Netplex businesses inhabit a telecommunications rain forest, grown effulgent in a soil of government contracts and political contacts. As the data highway industry grows, it is creating a formidable lobbying and regulatory challenge. Fundamental values, such as protecting intellectual property, privacy, and free speech, must be restudied for an electronic age.

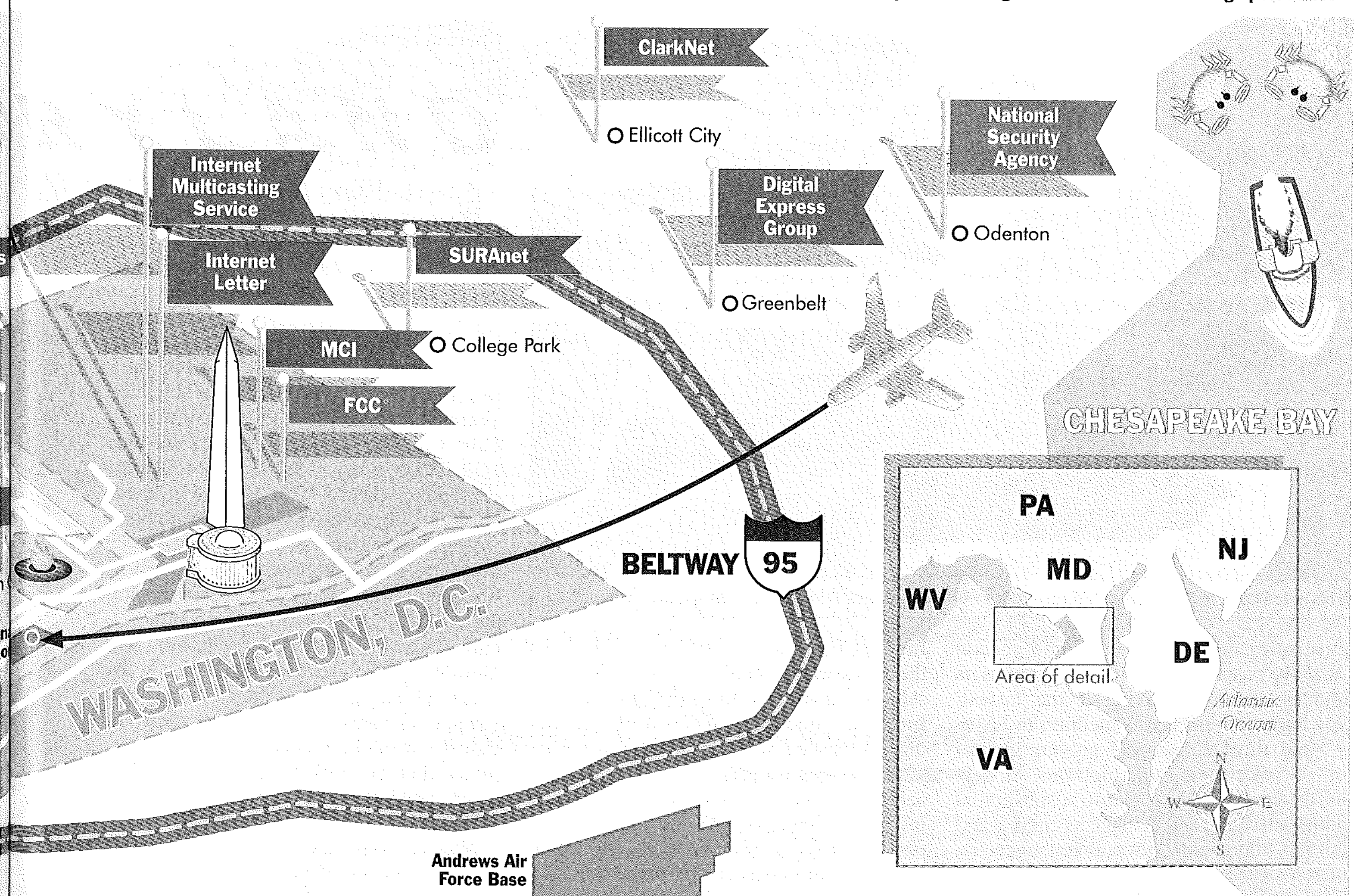
This region has long been the world center of satellite communications, with Comsat, GTE Spacenet, Hughes, Intelsat, and more orbiting the Washington Monument. Here reside vast federal government data communications networks, such as those operated by NASA and the Defense Department. The District of Columbia is home to MCI, the second-largest—and most aggressive—U.S. long-distance phone company. In three buildings near Dulles Airport, No. 3 carrier Sprint has its largest concentration of employees outside its Kansas City headquarters.

The local phone company is Bell Atlantic, the pushiest Baby Bell, soon to own cable TV giant Tele-Communications Inc. Northern Telecom's U.S. headquarters is in McLean, Virginia. Half a mile down Leesburg Pike, in Vienna, is AT&T Paradyne, a subsidiary that deals in data communications; next to it, American headquarters for Britain's Cable & Wireless PLC, which sells long-distance phone and data services to companies—$507 million on this continent last year. Across the street is the second-biggest office of Metropolitan Fiber Systems, an Omaha company that competes with local telcos to offer access to long-distance service.

The key enterprise in the Netplex is one that most people, even many who are part of it, don't think of as a business at all: the Internet. The Internet takes its name from what it does: It links more than 25,000 computer networks, having some 20 million users around the globe. Many refer to it simply as "the net." Users communicate

A HIGH-TECH CAPITAL

The area around Washington, D.C., has become the world center of the data communications industry and the focal point of the global Internet. Flagged here in red are the principal (and some of the smaller) businesses of the Netplex: The companies build and manage optical-fiber networks, sell Internet connections to companies and individuals, or offer other services. Blue flags mark important U.S. government data networking operations.



via an electronic lingua franca that enables any computer on a network hooked to the Internet to send messages, files, software, and other data to any other computer on the net.

The Internet was created by the Pentagon as a Cold War communications network. It grew to include defense contractors and universities, and has exploded into general use in the past two years. Its number of users doubles annually, making it the fastest-growing communications medium in history—and the technological proving ground for the electronic superhighway. Already the Internet has given rise to a substantial industry to build and manage its circuits and link up companies, government agencies, universities, and individuals.

While the Internet has no corporate identity, it does have a center of gravity, and the Netplex is it. Says Anthony Rutkowski, the director of Sprint International and a vice president of the Internet Society, a volunteer group that promotes Internet use and helps set its technology standards: "It's uncanny how many of us in the Internet business are strung up and down the accessway to Dulles Airport." Here reside the dominant for-profit providers of Internet connections and two of the four biggest on-line services, which offer subscribers E-mail, electronic versions of magazines, access to airline reservations and investment services, and the like. The Internet Society is here; so is the computer that houses the master register of affiliated networks' electronic addresses, as well as a raft of Internet services, software houses and hardware makers, and associations. Well over half of Internet traffic between the U.S. and other nations—hundreds of gigabytes each day—passes through the Netplex.

CHRIS BUCK

As users flock to the Internet, entrepreneurs like Jamie Clark start businesses to serve them.

THE DATA HIGHWAY industry is as big as you want it to be, depending on how expansively you define it. Defined narrowly, it's just $100 million in annual sales, according to Martin Schoffstall, vice president of Performance Systems International (PSI) of Herndon, Virginia, a supplier of Internet connections. He is counting just the market for selling interorganizational, data-only communications services—E-mail, file transfer, and so on—using the Internet's transmission protocol.

Broaden the definition to include on-line services like America Online (Vienna, Virginia), and the annual revenue stream is about $1 billion. Add another $1.8 billion if you count commercial services such as electronic data interchange, which enables companies that do business with one another to set up automatic purchasing, invoicing, and funds transfer, and whose major participants include General Electric Information Services (Rockville), Sprint, and MCI.

However defined, the data communications industry is growing faster than zebra mussels in a drainpipe. PSI, which connects about 5,000 companies and organizations to the Internet, added 300 accounts in December alone. An account might represent one computer, or dozens, or even thousands. Last year, PSI's archrival UUNET Technologies, 12 miles to the southeast in Falls Church, Virginia, doubled its business. The number of subscribers to America Online grew 145%, putting grievous strain on the company's capacity to serve them. Digital Express, an Internet service that Douglas Humphrey, 34, started in his basement 2½ years ago, had three employees in January 1993 and 15 a year later; revenues grow 10% to 20% a month. Says Humphrey: "The Internet is basically five years old, but in this business you measure time in dog years. Five years from now, the industry won't be recognizable." MCI estimates that by 1998 businesses will spend nearly $40 billion on data communication, more than on voice phone service.

Netplex companies can be put in four groups, though the lines between them blur:

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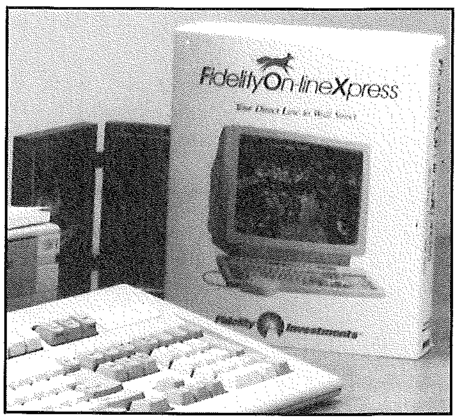

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CHRIS BUCK

Internet mastermind Vint Cerf stands by the computer housing the net's master address list.

PIPELINE OWNERS. These are companies that build, sell, and rent out high-speed lines; the big players are Sprint, MCI, and Metropolitan Fiber Systems. Each operates fiber-optic networks that carry digital signals at 45 megabits per second, more than 3,000 times the rate of modems in personal computers. Sprint leases circuits to UUNET, America Online, Digital Express, and other Internet companies; a Sprint subsidiary in Herndon transmits 62% of Internet traffic between the U.S. and other nations. Says CEO William T. Esrey: "Our Internet capabilities are unrivaled."

Unmatched, maybe, but not unrivaled. MCI is co-owner (with IBM and Merit Network of Ann Arbor, Michigan) of Advanced Network and Services, which operates the National Science Foundation network (NSFnet), the main line for federal and educational Internet traffic. Prodigy, the on-line service owned by Sears and IBM, runs on MCI lines. In January, MCI scored a coup, hiring Vinton Cerf, 50, the computer scientist who co-authored the basic Internet protocol and who is also president of the Internet Society. At MCI he will develop designs and software for a global communications system called networkMCI, which will let businesses deliver video on demand and other sexy services. Says Cerf: "MCI hopes that when you think Internet, you'll think 'networkMCI.' "

Metropolitan Fiber Systems operates a fiber line that runs between Falls Church, Virginia, and College Park, Maryland. Called the Metropolitan Area Ethernet (and nicknamed MAE-East, with a bow toward film star Mae West), it is arguably the Internet's single most important segment, because it directly connects Sprint, PSI, UUNET, the NSFnet, and the main data line to Europe.

LEASED-LINE PROVIDERS. This group sells Internet connections, mainly in the form of leased lines, to corporations and other large groups that want to hook their networks to the Internet. They charge $650 to $3,400 a month, depending on the speed and capacity of the connection.

Only six companies offer Internet access nationwide from local access points in many different cities. The three in the Netplex—PSI, UUNET, and Sprint—are by far the biggest. In the Netplex too is SURAnet (College Park, Maryland), a regional lessor linked to MAE-East whose main customers are universities and researchers in the Southeast and Latin America.

UUNET basically invented the business of leasing corporate Internet connections. Richard Adams started with the seismic research network of the U.S. Geological Survey, in Arlington, Virginia; he set up UUNET in 1987 and turned it into a for-profit corporation three years later. PSI founders Schoffstall and William Schrader moved to Virginia in late 1989 from upstate New York, leaving a nonprofit regional Internet service. Says Schoffstall: "We came for access, to make sure our public-policy goals were heard—those being commercialization of the Internet and making sure the playing field isn't tilted toward certain blessed government contractors." The villain, in his eyes and Adams's, is Advanced Network & Services, which they feel had an unfair leg up in its commercial Internet business because it operates the NSF network with government money. ANS and the NSF deny the charge.

PSI and UUNET are roughly equal in size; their principals speak of one another with the mixture of respect and dismissiveness one imagines Westinghouse and General Electric executives displayed a century ago. Adams claims that a third of his customers came from his rival up the road. Says PSI's Schoffstall: "On January 1, 1990, we were the smallest Internet provider. Now we're the biggest." In an industry where it's hard to tell the entrepreneurs from the amateurs, both are building solid management and technical staffs to operate decentralized systems. That's not easy, according to Schoffstall: "The talent base for running distributed networks on a planetary scale is very narrow. You know that airline ticketing is a technical challenge; this business is like airline ticketing on steroids."

DIAL-UPS. Like the leased-line providers, this group also hooks people to the In-

ternet but on a smaller scale, concentrating on customers who connect a single computer by means of a modem and ordinary phone line, and pay about $20 a month. The dial-ups are a colorful lot. Take Digital Express founder Doug Humphrey, 6-foot-3 and 275 pounds, an ex-troubleshooter for Tandem Computers with a gargantuan appetite for business. He says, "The Internet is the beginning of the next infrastructure, as essential as water, power, phones, sewers, roads—and beer, probably. I don't know whether a small company can survive the transition." To expand beyond the onesy-twosy business of signing up individuals with PCs, Humphrey is pushing hard into the leased-line market, pitching to government and corporate accounts in the Netplex and New York City. Capital for the expansion will come from Adam Curry, a video jockey on MTV.

Near Baltimore, James Clark, 31, runs tiny ClarkNet from a working barn on his father's farm, where cattle low and modems glow. Clark left an insurance company to found the company last May. He has been deaf since birth, and three of his four partners are hearing-impaired—a disability irrelevant in cyberspace. In addition to ordinary dial-up Internet connections, ClarkNet provides technical support for people whose hearing problems keep them from seeking information by phone.

Meta Network, in Arlington, serves as the electronic home of Vice President Gore's "reinventing government" task force. Using a powerful Dell processor linked to the Internet, the company creates on-line "conference centers" that include electronic bulletin boards, discussion groups, and specialized databases. The Gore task force calls its conference center NetResults. Other customers: the Kennedy Center for the Arts, the American Bar Association, and a group of scientists studying chaos theory. Participants can visit their conference center electronically from any Internet access point in the world, avoiding long-distance charges.

The Netplex also gave birth to another kind of dial-up, the public on-line service. The first, the Source, started in McLean in 1979; it is now part of CompuServe, in Columbus, Ohio. The Netplex is host to two big on-line services, America Online, No. 3 after Prodigy and CompuServe, and GEnie, No. 4, owned by GE Information Services.

On-line services stand a bit apart from the Internet. Because they serve Mammon, they were not allowed to connect to the once wholly noncommercial Internet until 1989, when Vint Cerf persuaded the government to let in commercial E-mail.

> Internet will be as essential as water, power, phones, sewers, roads—and beer."

CAMP FOLLOWERS. The list of those making a living from internetworking in the Washington area could be extended almost indefinitely. Network Solutions (Herndon) manages the military's Defense Data Network (Chantilly, Virginia) and, under contract from the NSF, assigns addresses to networks as they join the Internet. InterCon Systems (Herndon) is the biggest producer of Internet software for Macintosh users. Newbridge Networks (Herndon again) sells more than $230 million a year in networking hardware. Almost invisible in the Netplex are the intelligence community's networks, such as the Financial Crimes Enforcement Network in Vienna, which monitors electronic currency transactions, looking for money launderers.

Amid so many data highway businesses, no wonder Media General Cable of Fairfax, in a survey of households in the Virginia county, found that more than half own personal computers and three-fifths of those have modems. Says vice president of technical operations Michael Nelson: "Three out of ten business cards I get have E-mail addresses."

> The Netplex will be a powerhouse, on a par with New York, Hollywood, and Silicon Valley.

The Netplex grew in Washington because the federal government is there. It is the biggest buyer of information technology. Feds built the Internet and still subsidize it—though as it has expanded, the subsidized portion of its costs has fallen to below 8%. (By comparison, government payments make up about 5% of farmers' income.)

Moreover, the federal bureaucracy is the world's largest producer of information. Consider the flow of data from the Securities and Exchange Commission alone, which Internet Multicasting Service, in the National Press Building downtown, has started to put on the net: about 140 megabytes per day, more than the entire capacity of a typical personal computer. It's logical that the information distribution business would grow up next to the factory.

The paradox of the Netplex is that this industry, which makes it feasible for computer users to live and work anywhere from Reykjavík to Jakarta, is so highly localized. Jean Villanueva, a vice president of America Online who has worked for GE Information Services and the Source, says, "We all know one another, or know who we are. I keep up with most of the GE folks and a lot of old Source people." Says Carl Malamud, president of Internet Multicasting Service: "We all talk to each other—we have to, because the net is a very complex machine."

When they talk, of course, cybernauts are as likely to share a byte as a meal. Scott Williamson of Network Solutions, who assigns Internet addresses, and Martin Schoffstall of PSI, who requests more of them than any other leased-line provider, work across the street from each other in a small complex of low-rise offices. But they never met until they were on an airplane headed for a conference in Ohio.

All the same, proximity to Washington matters. The government's relative importance as a market will diminish, but not its power to affect the young industry. Says Frank Burns, a Meta Network partner who has painted his Dell 320N notebook with Southwestern Indian designs: "Technically, we could be anywhere, but the real questions aren't technical. They are public policy and social change. It's really important to be here."

The Netplex's enduring advantage as a business center is likely to be its people. The technical and service skills required to run large data networks are scarce, and labor markets work best when people can change jobs without changing mortgages. Washington, predicts America Online President Stephen Case, will be an economic powerhouse in the electronic mega-industry, on a par with New York, Hollywood, and Silicon Valley.

About time the place earned its keep. ■

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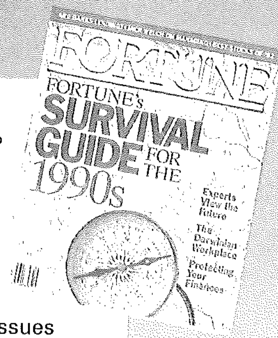

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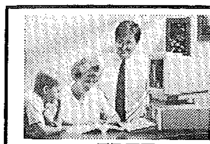

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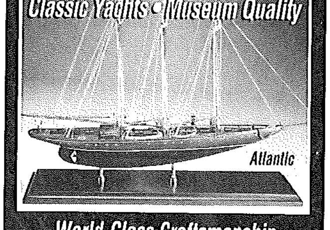

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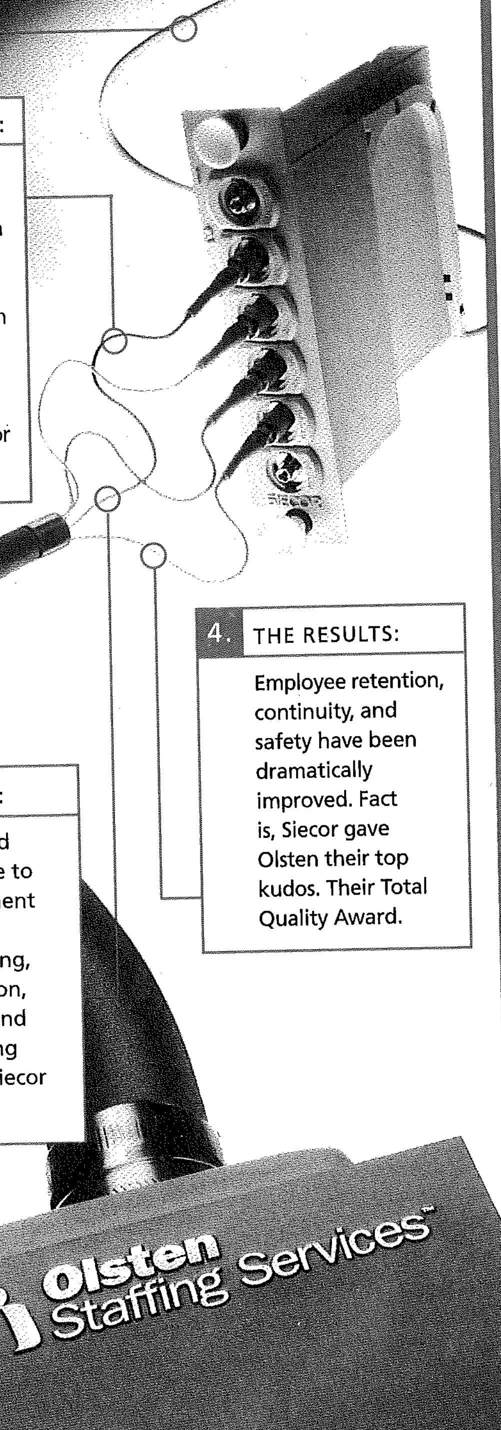

THE WIRED EXECUTIVE

BY ALISON L. SPROUT

USING A PC TO BE A BETTER BOSS

Counting on computer software to help manage people may sound Orwellian, but an IDS vice president shows how it can work.

Roger Corea, 50, has spent most of his 25 years at IDS Financial Services honing his management skills and taking charge of more and more employees. Today, as vice president in charge of the Northeast region, he oversees 15 division vice presidents, each with a staff of several dozen financial planners. He told FORTUNE how **ManagePro for Windows** software, from Avantos Performance Systems of Emeryville, California, helps him supervise his executives.

Why did you start using ManagePro?

I've always been interested in the power of computers to organize time. I'd tried personal information management software with features like calendars, address books, and so on. That type of program is good for scheduling and keeping track of data, but it doesn't do anything to help you manage.

I needed a system that would help me implement our management philosophy and document goals and progress. I found ManagePro about a year ago, and now it's always up on my screen, whether I'm at the office or on the road. My computer is a **Toshiba T4400C** notebook. When I'm at the office I use it with a docking station to connect to our network.

How does ManagePro work?

It's similar to the process we already had at IDS. ManagePro is designed to help me establish goals, monitor progress, give informal feedback, and conduct reviews. I use mainly the People portion of the program, but there's also a section called Goals, for managers who don't have anyone reporting to them directly but use the software to track projects.

Can you walk through what's involved?

Each fall I list all the managers in my region. Then I click on each name using a mouse and enter that person's goals for the next year, such as financial-planner productivity and number of new clients. Under each goal I list the strategies that the manager and I have agreed on to reach it.

Corea bosses 15 execs from his base in Fairport, New York.

PHIL MATT

After my database is ready, I use ManagePro to monitor my managers' progress. I keep a running record of phone conversations and meetings in the Progress section under each person's name and take notes on how they're doing. My administrative assistants enter numbers taken from standard performance reports we have for each division and pipe them into my machine via the office network.

The Feedback and Coaching section lets me record the advice I'm giving as well as the manager's response. Whenever I talk to that manager, I can call up what we talked about before and see whether things have improved. I can also program ManagePro to remind me when it's time to check in with different managers.

WHAT HE USES

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TOSHIBA T4400C
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Has the program made a difference?

I have one manager who is an excellent leader, yet at one point his office had the highest refund rate in the region. (IDS offers clients a refund if they're not satisfied with their initial financial plan.) We agreed last January that by June the refund rate should be down by 30%, and that by year-end it should match the regional average. I documented his strategy and progress using the program. It was one of four or five issues that we regularly discussed. By June he had exceeded his goal. It could have been done without ManagePro, but our strategy might have been lost in the shuffle of maybe 50 other areas I was keeping my eye on.

What about performance reviews?

To do 15 reviews well is quite a challenge. I used to juggle about 40 file folders—several for each manager. Now the information is in the computer, and I can create a report from the data I've been collecting all along. I've cut the time I need to prepare for a review by at least 70%, and my reviews are more comprehensive and relevant. I used to do only semiannual reviews; now I do them every quarter.

How else has management software improved the way you work?

My anxiety level is a lot lower! That's because I'm much better organized and more efficient. I spend less time writing plans and more time taking action. My conversations with managers used to be full of general discussions about what was going on. Now our talks have an agenda and we focus on their goals, so the managers pay more attention too. As my boss likes to say, people respect what you inspect. F

COMPETITIVENESS: DOES IT MATTER?

A lot for companies—but hardly at all for countries, argues a top U.S. economist in a new book. Raising *domestic* productivity, not capturing global markets, is what lifts living standards. ■ *by Paul Krugman*

ALMOST NOBODY—in business or government—would disagree with this statement: "Today America is part of a truly global economy. To maintain our standard of living, we must learn to compete in an ever tougher world marketplace. That's why high productivity and product quality have become essential. We need to move the economy into high-value sectors that will generate jobs for the future. And the only way we can be competitive is if we forge a new partnership between government and business."

The problem is: It's baloney. In reality, there is almost nothing to our fixation with national competitiveness, or its central idea—that every country is like a giant corporation slugging it out against rivals in global markets. The U.S. and Japan are simply not competitors in the same way that, say, Ford competes with Toyota. Any country's standard of living depends almost entirely on its own domestic economic performance, and not on how it performs *relative* to other countries. That's not just my view; it's what most economists think.

Why should you care? One important reason: Countries that wrongly think they are in a competitive struggle over who gets the spoils are more likely to fall into a major trade war. Such conflicts don't destroy economies the way real wars do, but they harm everyone—and it takes a long time to recover from them. When protectionist measures like the infamous Smoot-Hawley tariff shattered the global trading system between the two world wars, trade among industrial countries didn't regain its 1914 peak until 1970.

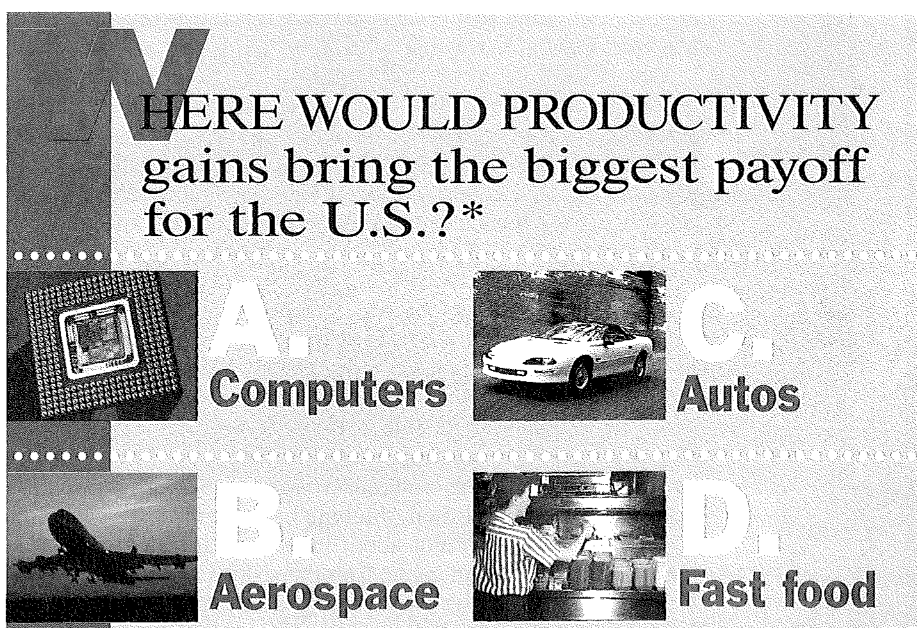
The other risk is that true believers in competitiveness—I call them strategic traders, to point up their obsession with winning export battles—often advocate pouring huge sums of taxpayer money into projects they hope will create jobs or build prestige but that make almost no economic sense. Example: the billions of dollars France has spent propping up its computer industry. Leading American strategic traders—among them, Labor Secretary Robert Reich, Clinton health policy adviser Ira Magaziner, and MIT economist Lester Thurow—have argued for similarly extravagant (and misguided) investments to enhance national competitiveness.

To understand why the doctrine of strategic trade drives economists into a fury, go back to that imaginary quotation. It was carefully constructed to illustrate six fundamental misconceptions. Let's do the numbers.

(1) "Part of a truly global economy." Strategic trade rhetoric implies both that the typical U.S. business or worker is now producing for global markets and that the extent of globalization is historically unprecedented. Neither is true.

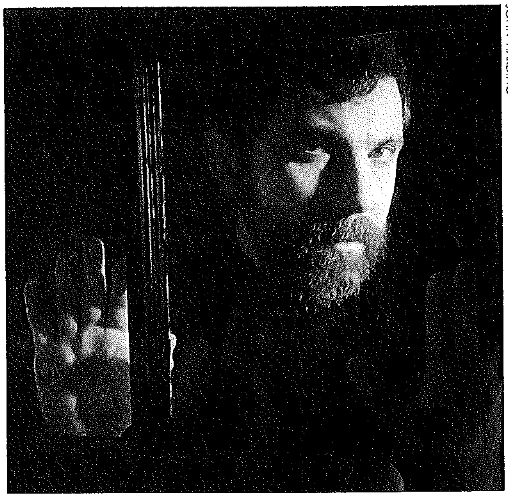
In 1992, exports were 10.6% of U.S. GDP, imports were 11.1%. This was substantially more than the 4% on both sides of the ledger in 1960. Surprisingly, however, the numbers haven't changed much since 1980: The big increase in the importance of international trade to the U.S. economy took place in the 1970s, not the 1980s. And even so, the numbers remain modest.

continued



COMPUTER: TED MORRISON; PLANE: IMAGE BANK; FOOD: MARIO RUIZ—TIME

Adapted from Peddling Prosperity: Economic Sense & Nonsense in the Age of Diminished Expectations *by Paul Krugman, to be published in March 1994 by W.W. Norton & Co.*



JOHN HARDING

MIT professor Paul Krugman, 41, is one of America's most respected experts in international trade and finance. This article is adapted from his latest book, *Peddling Prosperity*.

Now remember the strategic traders' favorite analogy: that a country is merely a corporation writ large. As we've just seen, the theoretical corporation called America Inc., even after globalization, sells almost 90% of its output to its own workers and shareholders. How many companies do anything close to that? None. Clearly countries are nothing at all like corporations.

One might argue that while most U.S. output is still sold to ourselves, a much larger proportion is sold in domestic markets that are newly subject to international competition, such as automobiles or computers. This is, however, only a little bit true. More than 70% of U.S. output consists of services rather than goods, and most services are effectively insulated from international competition because they are hard to transport. Collectively, services account for only about 20% of U.S. trade.

Nor is the degree of U.S. dependence on world trade without precedent—or even unusual. Most historians of the international economy date the emergence of a truly global economy to the Forties—the *1840s*, when railroads and steamships reduced transport costs to the point where large-scale shipments of bulk commodities became possible. International trade quickly surged. By the mid-19th century, the leading economy of the day, Great Britain, was exporting more than a third of its GDP—three times as much as the U.S. exports today. Britain eventually invested about 40% of its savings overseas every year. And an era of mostly open borders was marked by international migration that dwarfs anything recent. (Where was your great-grandmother born?)

Why does this matter? Strategic traders reject conventional economic wisdom on the grounds that it is no longer relevant in a global economy—but even classical economic theory, developed mostly by English economists in the 19th century, applied to an economy that was far more dependent on international trade and investment than the U.S. is today. So what looks like wisdom to the unwary looks like ignorance and shoddy thinking to anyone who knows some economic history.

(2) "Competing in the world marketplace." Again, strategic traders hold that countries compete with each other in the same way that Nike competes with Reebok; they attribute the long stagnation of middle-class living standards in the U.S. to a failure to do this effectively.

What's wrong with their thinking? At a conceptual level, the most basic point about international trade is that it is not a zero-sum game. Companies like Nike and Reebok are almost purely rivals: Only a tiny fraction of Nike's sales are to Reebok workers, and vice versa. So one's success tends to be at the other's expense. But the major industrial countries, while they sell products that compete with each other, are also each other's main export markets and main suppliers of useful imports. If anything, a successful European or Japanese economy helps the U.S. by providing us with larger markets.

Moreover, the purpose of international trade—the reason it is useful—is to import, not to export. That is, what a country really gains from trade is the ability to import things it wants. Exports are not an objective in and of themselves; the need to export is a burden that a country must bear because its import suppliers are crass enough to demand payment.

But isn't it a fact that the stagnation of U.S. living standards has been in large part due to a failure to compete effectively on world markets? No, it's not a fact. From 1979 to 1989 the real compensation of all U.S. workers rose 5.8%, while productivity rose 5.1%. These are purely domestic variables—that is, productivity is not measured relative to other countries, and no data about global market shares or anything that involves the global economy are taken into account. Yet the two series rose by almost exactly the same (disappointing) amount. So we got almost exactly the growth in living standards we would have gotten if the U.S. were alone in the world and we had no international trade at all.

(3) "High productivity." Just about everyone now agrees that the U.S. economy needs higher productivity. Most people, however, are confused about why. The most popular explanation is that we need to be productive in order to compete in the global economy. That was the explanation President Clinton gave in February 1993, when he tried to justify an economic package that included painful tax increases. But it's wrong. We need to be more productive in order to produce more, and this would be true even if the U.S. were completely without foreign competitors or customers.

To illustrate, let's consider three questions. First, what happens to a country whose productivity is inferior to that of the countries it trades with? The common view is that it will suffer. After all, if you aren't better than your rivals in *something*, how can you sell anything on world markets? The right answer is that being less productive than your trading partners poses no special problems. Of course, a country whose productivity is low across the board is not going to have a high standard of living; but that has nothing to do with the fact that it must coexist with more productive nations. In fact, the option of exporting to those superior "competitors" the things you don't make too badly, and importing from them the things you do, delivers a somewhat higher living standard than a country with very low domestic productivity might otherwise enjoy. This is the basic point David Ricardo made in 1817 when he first expounded the principle of comparative advantage—a

D. Fast food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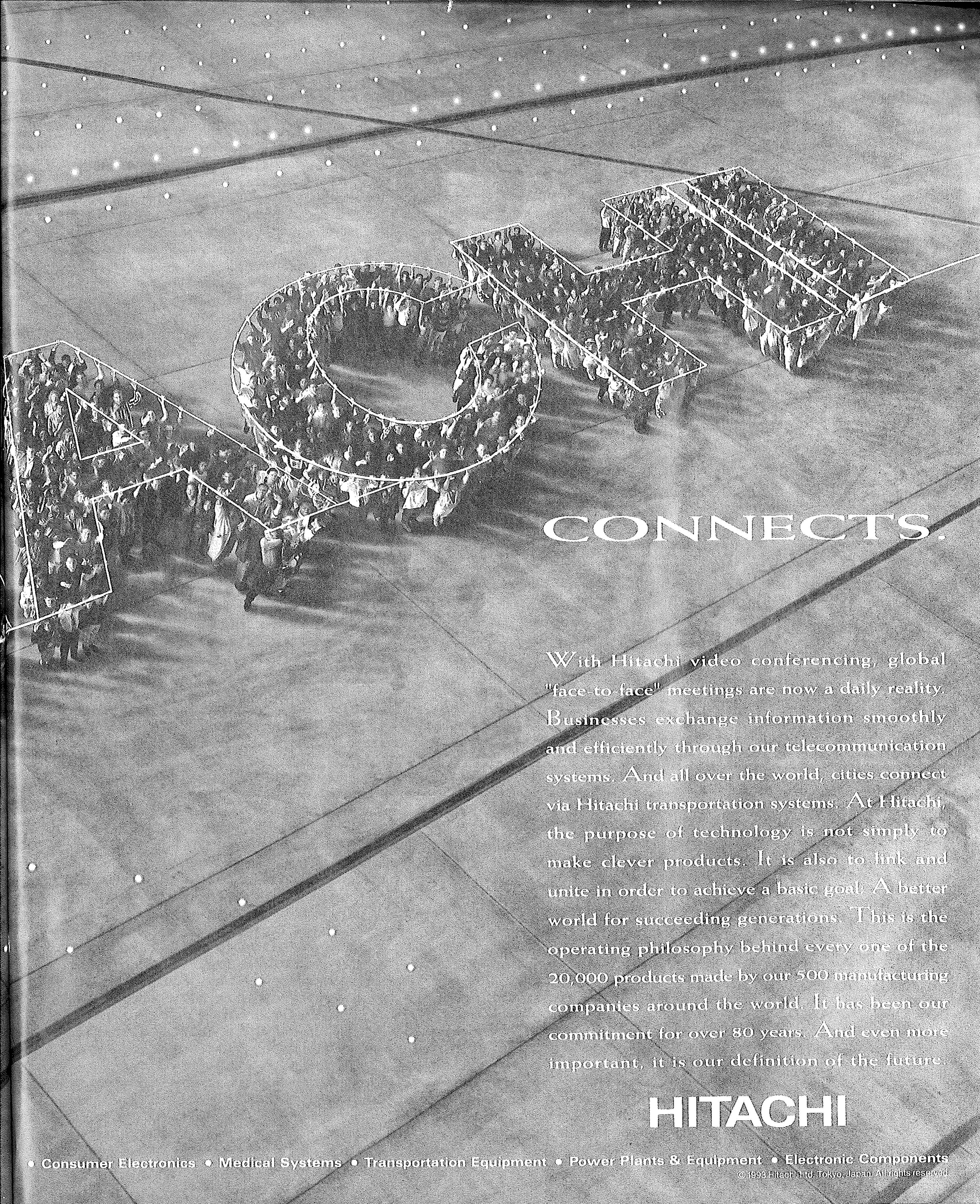
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principle that every student learns in Economics 101 and that most politicians persist in ignoring.

Second question: What happens to a country whose productivity growth lags behind that of its rivals? The common view is that it is in big trouble—after all, a corporation that systematically fails to match competitors' productivity gains is not going to stay in business. The right answer, however, is that how fast productivity is growing abroad, and whether we are ahead of or behind the pack, is irrelevant.

From World War II until 1973, productivity in the U.S. rose 2.8% annually. After 1973, it rose only 0.9% annually, a rate generally slower than in other advanced nations. If the rest of the world did not exist, this slowdown would have reduced growth in U.S. incomes by 1.9% per year. Any effects from lagging behind foreign competitors contributed at most another 0.1 percentage point. The moral: What matters for the trend in U.S. living standards is our domestic rate of productivity growth—*period*.

VALUE ADDED per worker, 1991 figures	Thousands
Cigarettes	$823
Petroleum refining	$270
Autos	$112
Tires & inner tubes	$101
Aerospace	$86
Electronics	$74
All manufacturing	$73

Strategic traders say the U.S. should pour money into industries with high value added per worker because they will generate the jobs of the future. Will they? Look at this list and decide for yourself.

Third question: Which is more important, productivity growth in industries that must compete with foreigners, or productivity growth in sectors that produce for sheltered domestic markets? Most people would answer that productivity growth among companies that compete internationally is more important. The right answer, again, is that what matters for the U.S. standard of living is the overall productivity of American workers. It doesn't matter whether they are competing with foreigners or producing only for the domestic market. This has one major implication that runs counter to much conventional wisdom: Service productivity matters more than manufacturing productivity. To be exact, since about 70% of the value added in the U.S. economy is in services, vs. 20% in manufacturing (with the remainder in agriculture, construction, and mining), a percentage point gain in service productivity is worth 3½ times as much as an equal gain in manufacturing.

(4) "High-value-added sectors." Strategic traders claim the best way to improve living standards is to encourage investment in sophisticated industries like computers and aerospace, which provide high value added per worker. Wrong again. Why is value added per worker in some businesses higher than in others? It isn't enough to assume they are just better businesses. If they were, capital and labor would flood into them, competing those high returns away. (Markets may be imperfect, but they aren't stupid or sluggish.) In fact, the usual reason value added per worker is high in some industries is that other inputs, such as capital or skill, are high there as well. Since the economy has limited supplies of capital and skill, encouraging industries that use those scarce resources intensively may well lower instead of raise per capita income.

What is most striking, however, is that advocates of "high value" industries, like Robert Reich and Lester Thurow, apparently haven't bothered to check which industries actually *do* have high value per worker. As the table on this page reveals, it turns out that the real high-value industries in the U.S. are extremely capital-intensive sectors like cigarettes and oil refining. High-tech sectors that everyone imagines are the keys to the future, like aircraft and electronics, are only average in their value added per worker.

(5) "Jobs." Many strategic traders blame America's failures in international competition for the loss of "good jobs" in manufacturing, with the unfortunate workers forced either into unemployment or into much lower-paying service jobs. The image of the former steelworker now earning minimum wage flipping hamburgers is deeply embedded in popular perceptions.

In fact, the U.S. economy has been the great job engine of the advanced world, with a 38% increase in employment from 1973 to 1990, compared with 19% in Japan and only 8% in Europe. Now it is true that real wages have stagnated. But is this because workers have been forced out of good manufacturing jobs into low-paying service jobs? No, for two reasons. First, manufacturing jobs are not all that well paid (the hourly wage in manufacturing is only 10% higher than in other jobs). The stagnation in real wages was not because good jobs in manufacturing were lost, but because real wages for *all* jobs that didn't require a college education stagnated or fell, as technological change reduced demand for less skilled workers. And second, the widespread belief that the U.S. has lost its manufacturing base in the face of foreign competition is simply wrong.

Deindustrialization and the "hollowing out" of the economy never happened. True, the share of manufacturing in U.S. value added and employment has been falling for many years. But this trend is common to all industrial countries. In fact, manufacturing's share of the economies of Germany and Japan has declined as fast as or faster than that in the U.S. Nor is there any mystery about the trend. Essentially, it is driven by the combination of relatively fast productivity growth in manufacturing and limited demand for manufactured goods. The general public prefers to spend most of the annual increase in its income on services. The result: Demand can be satisfied by a static or even falling number of factory workers.

The story should sound familiar: It's exactly what happened to agriculture 50 years earlier. Very few Americans now live on the farm, not because our farmers are uncompetitive, but because they are so productive we don't need many of them. And America's "deagriculturalization" has proceeded in spite of consistent trade surpluses in farm products.

What appears to make the manufacturing story different is that since 1980 the U.S. has consistently run trade deficits in manufacturing, and there is no question that some industries, such as shoes and apparel, have shrunk

under the impact of import competition. But is this mainly because of a failure to be competitive in manufacturing?

The answer is an overwhelming no. In 1992 the U.S. trade deficit in manufactured goods was $62 billion. Now remember that much of a dollar of "manufactured" exports indirectly represents services such as health care purchased by the manufacturer. (GM's largest supplier is not a steel company but Blue Cross/Blue Shield.) Input-output studies of the U.S. economy give us a pretty good estimate of the hidden service component of manufactures trade: Only about 60% of a dollar of manufactures sales represents manufacturing value added. Thus, we should scale down the merchandise trade deficit by 40% to estimate the overall impact of trade on the industrial base. This suggests that, at most, competitive problems in U.S. manufacturing, as measured by our trade balance, reduced value added in these industries by 60% of $62 billion, or $37 billion, in 1992.

That may sound like a big number, but keep in mind that even a supposedly "deindustrialized" America in 1992 still had a value added in manufacturing of more than $1.1 trillion. We have just suggested that in the absence of a trade deficit that number might have been about $37 billion larger; that's a difference of only 3.3%.

(6) "A new partnership." This is, of course, the bottom line. Unfortunately, as we've just seen, a government-business partnership guided by the tenets of strategic trade would almost certainly lead to bad policies, since it would be founded on excruciatingly bad economics—as bad, in its own way, as the extreme supply-side doctrine popularized by a different set of policy entrepreneurs during Ronald Reagan's presidency.

MY ADVICE is to consider a proper understanding of the real relationship between productivity and competitiveness as a kind of test of the reliability of supposed experts, in and out of government. The issues involved are not hard to sort out—we're not talking quantum mechanics here. So if you hear someone say something along the lines of "America needs higher productivity so that it can compete in today's global economy," never mind who he is, or how plausible he sounds. He might as well be wearing a flashing neon sign that reads I DON'T KNOW WHAT I'M TALKING ABOUT. ■

CHINA'S INVESTMENT BOOM

Foreign investors are swarming to the mainland, hoping to cash in on the country's double-digit growth. But the risks are rising faster than the GDP. ■ *by John J. Curran*

NO COUNTRY today is more synonymous with growth, capital gains, and vast opportunities to make money than China. Small investors are crowding into mutual funds that promise to grab some of China's double-digit expansion. Pension funds are pulling cash out of tired LBO funds, where the payoff has dwindled, and handing it to Mandarin money managers who talk of 40% or 50% prospective returns. U.S. companies are directly investing an estimated $3.5 billion a year in factories and offices in China.

Talk about a turnaround. Just a few years ago China's investment potential was nil. There were no mainland stocks to speak of, the bottom was falling out of Hong Kong shares in the wake of the Tiananmen Square massacre, and U.S. corporate investment was shriveling. China's politics haven't changed much since then, but investor attitudes have. Today there are more than 50 dedicated China funds managing some $3 billion for institutional and individual investors in the West. You can invest in most of the funds either directly or through a U.S. broker. The stocks of Chinese state enterprises that have gone public can be bought through a broker too, though you may have to pay an extra fee if they are listed only on a Chinese exchange and not in New York or Hong Kong.

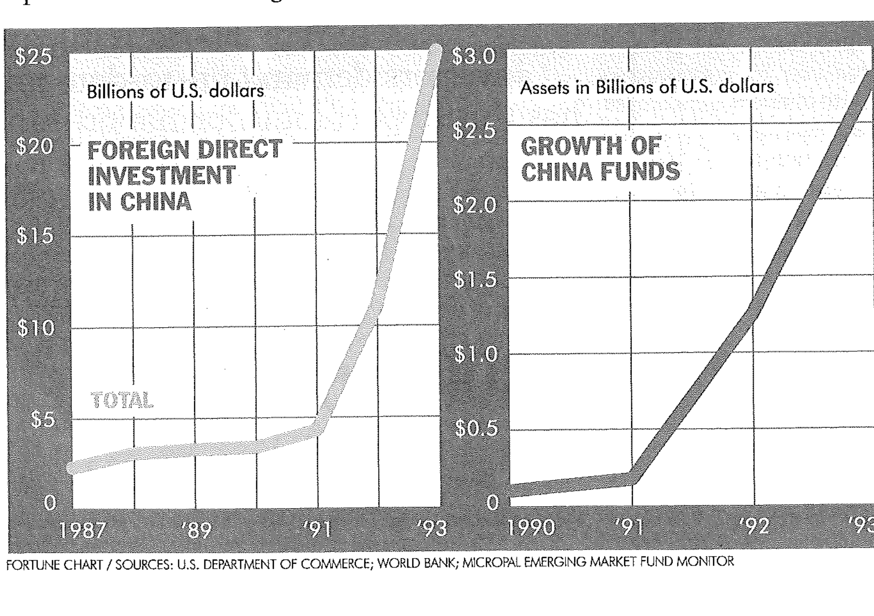
The wave hasn't crested yet. Within the past few months several big Asia infrastructure funds have been launched in New York and elsewhere, aimed at financing roads, bridges, and power plants in China as well as in other developing countries. Says Philip Tose, chairman of Peregrine Investments Holdings in Hong Kong, which will manage one of these funds: "Chinese consume 711 kilowatts of power per capita, vs. 11,333 per capita in the U.S. The potential is enormous."

So it is. And nothing conveys that potential more vividly than a firsthand look at the mainland's amazing transformation. In something of a ritualistic dance, American pension fund managers arrive in Beijing in groups of 50 or more for banquets with party bureaucrats, then fly down the coast for factory tours around Shanghai, move through the thriving southern province of Guangdong—where GDP rose 23% last year—and end up meeting with analysts in Hong Kong. Separate trips have been organized by Morgan Stanley, pension adviser Frank Russell, and *Institutional Investor* magazine, among others. The camera-toting money managers return to the U.S. eager to pump their portfolios full of China's prosperity. The question is, Are they right, or just dangerously naive?

Maybe they're both. Like the boom in junk bonds in the 1980s or in the Nifty Fifty stocks of the early 1970s, investment in China has merit—lots of it. But there are risks too, and they are getting bigger than most investors realize. Says Morgan Stanley's Barton Biggs, who has been investing internationally for more than a decade: "I am disconcerted by the view that no one thinks he can lose money there."

But then there's the growth. China is the world's largest consumer market, with 1.2 billion people whose incomes are rising rapidly. A McKinsey study concludes that China has 60 million people who have per capita incomes of $1,000 a year or more, the level at which consumerism begins to blossom. These new consumers will need power plants, designer clothiers, McDonald's, you name it. And they represent just a small fraction of the population. The potential for a huge consumer market is staggering.

So why are longtime China watchers starting to worry? One reason is the sheer speed at which the country is changing from a plodding state-planned economy to one



FORTUNE CHART / SOURCES: U.S. DEPARTMENT OF COMMERCE; WORLD BANK; MICROPAL EMERGING MARKET FUND MONITOR

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driven more by market forces. While the direction is right—and the scope is impressive—the transition is not without troubles.

One point of concern: China's entrepreneurial provinces along the coast are racing ahead at GDP growth rates of 20% or more, fueled in large part by foreign capital. Inflation is high, but rising wages ease the bite. Inland growth is much slower, and while prices are rising just as fast, wages are not. The government has tried without much success to quell inflation, mainly through price controls on some essential commodities. Demonstrations and other signs of social unrest appear to be growing.

A more immediate worry for investors is that if inflation is not checked, China's currency, the yuan, could be devalued. Investors only have to think back a few years to a period when China's government was devaluing the currency every few months. Growth is nice, but so is capital preservation.

POLITICAL RISKS seem to be rising too. Can the market keep liberalizing without creating a strong desire among citizens for more freedom in other areas of life, leading to another bloody confrontation with the old-line Communist leaders? And what happens to China's power structure after Deng Xiaoping dies? Such concerns do not negate the long-term case for China, but they do make it less of a sure bet. Investors need patience, smarts, and a strong stomach for volatility.

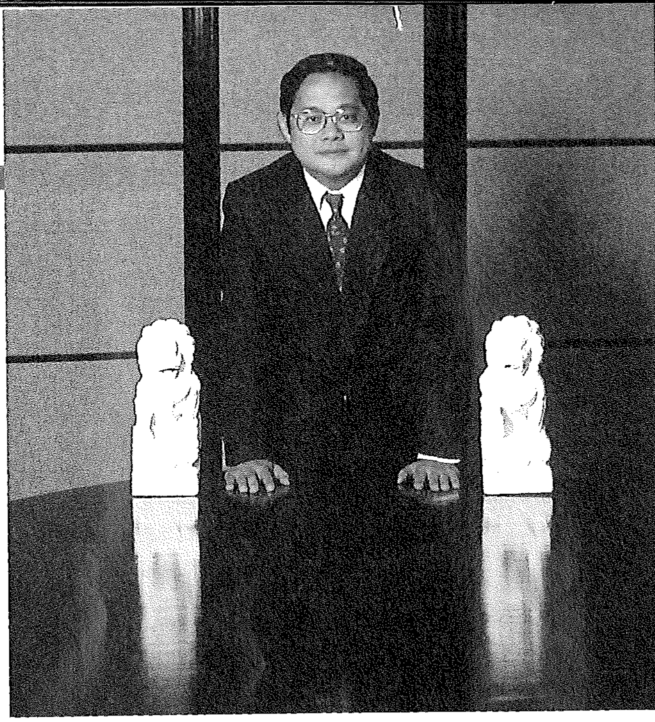
Many institutional investors are no longer wrestling with whether to go east, but how. Some are buying China's listed securities, which are multiplying fast, while others are taking the leap into direct investing, where liquidity is traded for the expectation of eventual fat payoffs. Smaller investors are generally limited to China's listed stocks or to funds that specialize in them. While direct investment funds are struggling, stocks and stock funds commonly produced returns of 50% or more in the past year.

Direct investment starts with one big advantage over listed securities—the price of entry is lower. Western investors can typically buy into an existing Chinese enterprise on the private market for as little as five times earnings, vs. ten to 20 times for publicly traded companies. But for many of the funds that were launched to do private-

Opening day: U.S. pension funds helped build this new entertainment center in Guangzhou.

market investment, that advantage is purely hypothetical. Says William Overholt, an economist at Bankers Trust in Hong Kong: "Many of these funds simply lack the ability and contacts to turn up good deals." As a result, even direct investment funds often end up parking cash in the same place individual investors do—in the listed securities markets.

One direct investment group that has had considerable success is Chinavest, a 14-year-old investment firm that started putting U.S. institutional money into China in 1985. The firm is headed by Robert Theleen, who was an Army intelligence officer in Vietnam during the war and stayed in the region. One of Chinavest's recent projects: a glittering new $3.8 million entertainment center in Guangzhou, which opened in late January.



Prudential's Fung thinks too much money is chasing too few deals.

With pension money from IBM, among others, Chinavest has undertaken 18 projects in China over the past nine years. It never goes in alone. "You need partners and connections in China," says Christopher Gray, a Chinavest vice president. "We wanted the entertainment center to appeal to parents, so we joined with the National Women's Institute, an association of women throughout China." Through such team play, Chinavest has been able to generate modest double-digit annual returns over the past nine years.

With China's risks rising, so must the expected returns. Morgan Stanley, which has been investing there for ten years, calculates the country's risk premium at 19%, meaning an investment in China must offer a prospective return that beats U.S. Treasury bills by at least 19 percentage points. That assumes that the Chinese investment is liquid, as a stock is. An illiquid investment has to do even better, by far. Direct investment fund managers say the potential returns they are offering investors today must be 30% or more.

That will be hard to make. Even when the performance bar was lower, most direct investors found the going too rough. A number have pulled out. Jardine Fleming, one of the original direct investors, has largely quit. Among its early missteps: opening a new restaurant for tourists near Tiananmen Square in 1989, just a week before the shooting began. Baring Asset Management also dropped out, opting like Jardine to concentrate on listed securities.

Other funds have come in to replace them, but many have yet to find deals that will generate the kinds of returns their clients expect. Observes Victor Fung, chairman of Prudential's Asian subsidiary in Hong Kong: "There's just too much money chasing too few deals." Fung, who manages a $500 million portfolio for Prudential Insurance, also worries that direct investment is not yet suitable for pension funds, which have a fiduciary responsibility. "There are no clear laws in China, and you can't say for sure how you're going to get your money back. Normally in direct investments you can get it back at the initial public offering. But even if you are a big investor in a state enterprise you have no say in when or whether it goes public."

Fung's family has invested in China, but when he wants China exposure for the pension money he manages, Fung sticks to public companies throughout Asia that have projects in China. That way he retains liquidity—he can sell his stock when he wants out.

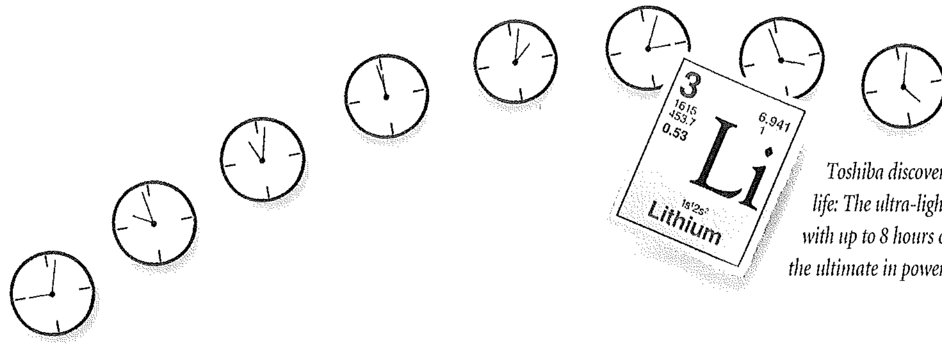
As more Chinese enterprises go public, the opportunities to cash out of a direct investment get better. Even so, the daunting bureaucracy can stifle deals before they get started. Investors seeking a direct investment often need hundreds of separate approvals from regional

REPORTER ASSOCIATE *Joe McGowan*

BUY A FACTORY, GET A SCHOOL

China's industrial giants provide many social services—some own hospitals and fire departments. Prior to going public, most of them unload these costly operations. So far, Shanghai Steel Tube has managed to eliminate nearly everything but its kindergarten.

intel inside



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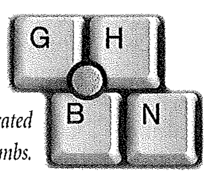

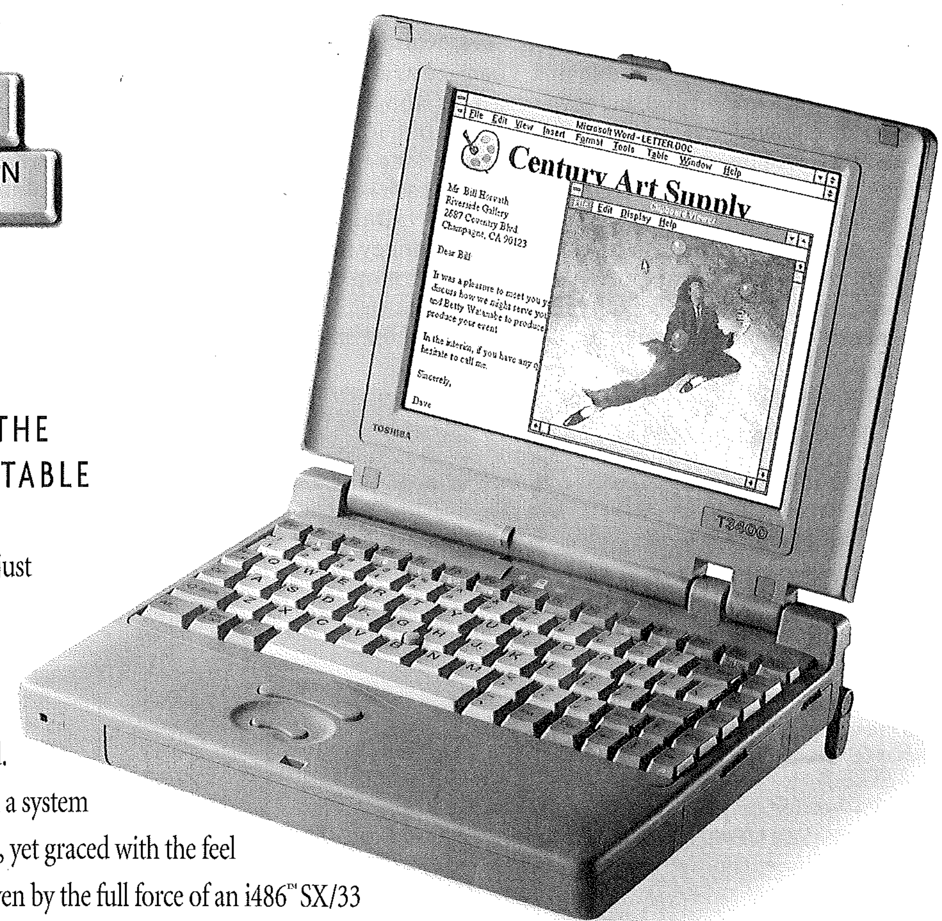

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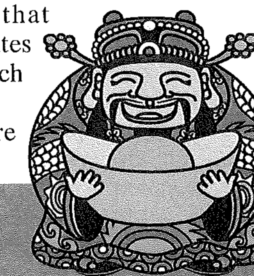
and local officials. Shanghai has tried to ease this problem by assigning Alex Ye, one of its senior officials, to the Hong Kong offices of Arthur Andersen. Ye has the authority to provide multiple approvals, or chops, that allow investors to bypass many smaller commissions and ministries. "I run a one-chop shop!" he proudly exclaims. Even so, the obstacles to entry remain high.

Before going public, Shanghai Steel Tube gets an accounting makeover from an Ernst & Young crew.

GIVEN the difficulties faced by direct investors, it's no surprise that much of the action lately has been in China's growing list of stocks. The big state-owned industrial enterprises began making initial public offerings when the Shanghai Stock Exchange opened in 1990. A second exchange, in Shenzhen, just outside of Hong Kong, began listing companies the following year. Until 1992, only Chinese nationals could buy these shares. Then a separate class known as B shares was created for foreigners.

In 1993, Beijing began to let some of its larger enterprises sell stock on foreign markets, beginning with the Hong Kong Stock Exchange. Since then six have gone public in Hong Kong, with a combined market value of roughly $1.9 billion. Three more mainland companies should list in Hong Kong early in 1994, and another batch of 22 is reportedly being readied. Four Chinese stocks have also listed on the New York Stock Exchange. The Big Board not only has higher P/E multiples than does Hong Kong—37.9 vs. 20.6 at the end of 1993—but it also has deeper pockets. Big IPOs done by Chinese companies in Hong Kong have soaked up so much of the colony's available cash that money market rates shot up by as much as two points.

The stocks are generally performing well—many returned more than 50% last year—but there are plenty of risks too. The government maintains control of many enterprises, and shareholders do not enjoy the readily enforceable rights of ownership that exist in capitalist markets. Only last December did China adopt an official "company law" recognizing the ownership rights of shareholders, and this will not take effect until next July. Says Cheuk Yan Leung, an attorney at Baker & McKenzie in Hong Kong who has worked on a number of China's stock offerings: "When it comes to very basic laws

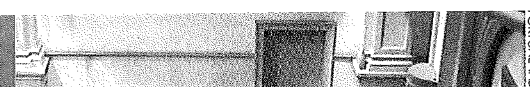


THE MANY WAYS TO PLAY CHINA'S GROWTH

CHINESE COMPANIES LISTED ON THE NEW YORK STOCK EXCHANGE	Listing date	Return
Brilliance China Automotive Holdings	10/9/92	-46.8%[1]
China Tire Holdings	7/15/93	30.1%
EK Chor China Motorcycle	6/29/93	31.0%
Shanghai Petrochemical	7/26/93	89.9%
CHINESE COMPANIES LISTED ON THE HONG KONG STOCK EXCHANGE		
Tsingtao Brewery	7/15/93	171.4%
Shanghai Petrochemical	7/26/93	89.9%
Beiren Printing Machinery	8/6/93	135.6%
Guangzhou Shipyard	8/6/93	101.9%
Maanshan Iron & Steel	11/3/93	76.2%
Kunming Machine Tool	12/7/93	155.1%
CHINESE COMPANIES LISTED ON THE AUSTRALIAN STOCK EXCHANGE		
Guangdong Corp.	9/28/93	40%
CHINA MUTUAL FUNDS (AVAILABLE TO U.S. INVESTORS)	Assets (millions)	Return (one year)
China Fund Inc.	$147.7	42.2%
EV Marathon Greater China Growth	$192.9	49.4%[2]
EV Traditional Greater China Growth	$235.8	80.7%
Greater China Fund	$134.9	77.4%
Ivy China Region Fund	$5.7	N.A.[3]
Jardine Fleming China Region Fund	$134.7	49.9%
Templeton China World Fund	$299.7	N.A.
MARKET INDEXES	Return (one year)	
Shanghai B-share index	55.9%	
Shenzhen B-share index	19.7%	

[1] Year to date. [2] Six-month return. [3] Not available.

FORTUNE TABLE



The Shanghai Stock Exchange is growing rapidly.

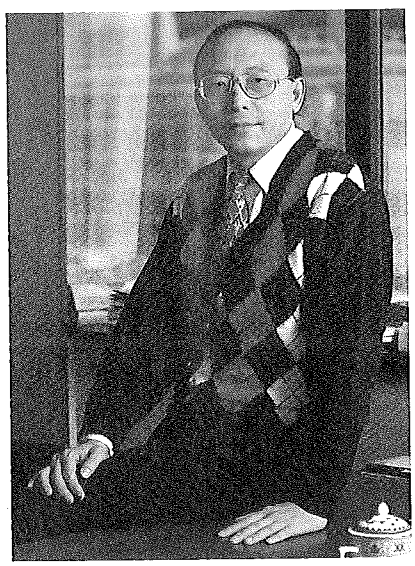
Foreign investment has brightened Shanghai's Nanjing Road. In Hong Kong (below), Shanghai official Alex Ye runs a "one-chop shop" to lure even more of it.

protecting investors, China has a lot of catching up to do."

Such shortcomings may not become apparent until trouble strikes. Assume, for example, that a publicly traded Chinese enterprise—one that you own stock in—goes under. Shareholders theoretically have a claim on the assets, but that claim has never been tested. Some investors fear that the state would grab all the assets. Welcome to the quasi-capitalist market.

ASIDE from legal considerations, just how good are these companies? The answer, for many, is not very. High-level Beijing bureaucrats privately concede that roughly one-third of China's state enterprises are hopelessly uncompetitive and should be shut down. They are kept alive only to avoid massive unemployment. Of the remaining two-thirds, half must change dramatically in order to survive without state subsidies. Only the rest can enter the marketplace in anything resembling their present condition. The better companies have gone public first, but among the thousands more that could be listed over the next few years there presumably will be many that should be closed.

To make enterprises more competitive—and more attractive to investors—China is slowly freeing them from the enormous social burdens they have borne. From steel mills to petrochemical plants, they have long been expected to give workers a lifetime of social services, including education, health care, and housing. Western investors hardly want to take on those obligations. But removing the vast social superstructure will be a monumental task, since China has no other safety net for its masses.



Shanghai Steel Tube, a manufacturer of stainless-steel tubes that is slated to issue B shares on the Shanghai exchange in March, is a prime example. In preparation, it has been making a number of changes, including reducing the head count. Of the 5,000 employees on the payroll, 1,000 are retirees enjoying what Chinese call the "iron rice bowl," the wage and benefit dole that never stops. President Gong Hong Lin says the company has "severed most of those obligations." Says Peter Churchouse, research director of Morgan Stanley Asia: "These companies come to market with lots of socialist baggage."

The company has created a board of directors to replace supervision from a government ministry. Gong says *she* now makes production decisions based on market demand but will confer with her board for more important decisions, such as changes in product lines. Says she: "Not just the operations of this company must change; the management systems must change as well."

The motives are good, but big questions remain about the profit potential of transformed state companies. Though managers and their boards will have more say, the government will still be the majority owner of many of these companies. Argues Gao Shangquan, a former vice minister of the State Commission for Restructuring Economic Systems: "There's nothing wrong with that. Some 20% of the FORTUNE Global 500 is state-owned." (Actually, state companies constitute only 5% of our list.)

Shareholders must also contend with inadequate financial information, though the Chinese are trying to improve the situation. When a company gets ready to list, staffers

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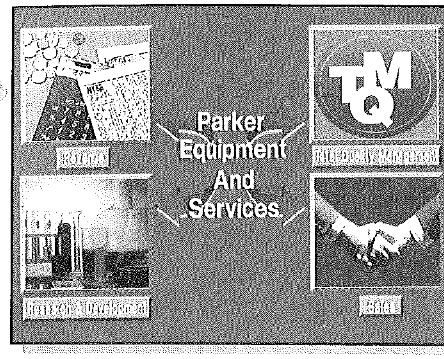

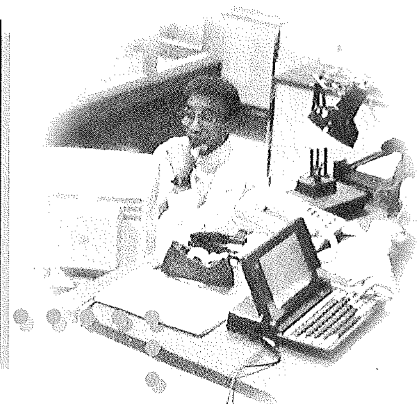

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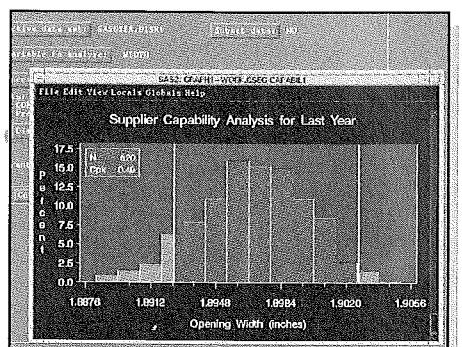

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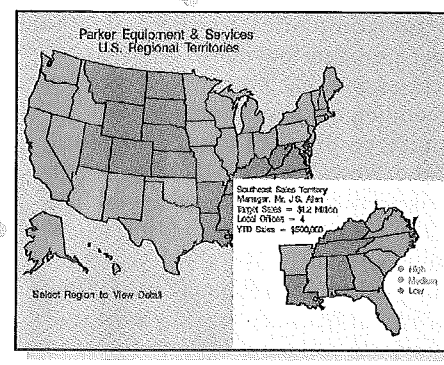

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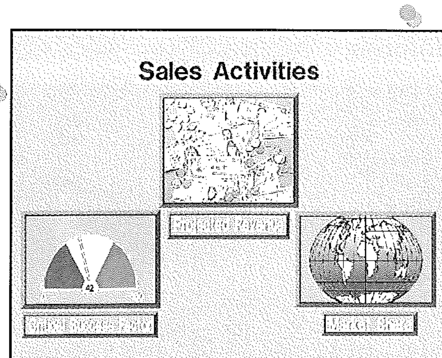

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To meet booming demand for its cellular phones, Motorola has begun an addition to its factory in Tianjin.

of major U.S. accounting firms move into its offices to convert communist-era accounting to a Western, profit-oriented standard. The job took Arthur Andersen 6,000 hours at Tsingtao Brewery.

The Ministry of Finance recently issued new accounting standards intended to bring Chinese accounting closer to that of the West. That may be wishful thinking. Says Meocre Li, managing partner of Arthur Andersen in Hong Kong: "It's easy to put out new standards, but the interpretation of them at the company level may not be the same as what the MoF intended. Also, there is no venue for companies to clarify whatever problem they have. Even the local accounting firms have problems understanding the new standards."

Chinese companies traded in Hong Kong and New York are held to tough standards imposed by the exchanges. The Hong Kong–listed companies, for example, must have their past three years' results adapted to international accounting standards and audited, vs. only one year for companies seeking a B-share listing in China. Because of these better reporting rules, many big investors pass up the domestically listed shares entirely and focus only on those listed in Hong Kong. With only six on the Hong Kong Exchange so far, the flood of buyers has pushed prices up dramatically. As a result, analysts say that investors can now find more value in the lower-quality, lower-priced B-share markets.

A better strategy may be the stock of an American company that has been successful in China. One example is Motorola. The semiconductor and cellular phone company entered China slowly back in the late 1980s. Despite an enormous potential market—in China there is only one phone for every 102 people—Motorola spent the first few years shipping pagers and cellular phones from the U.S., keeping capital outlays to a minimum. In 1993, with sales growing 100% a year, Motorola built a plant in Tianjin, and it is now expanding it. It's also looking for other plant sites and is putting up a training center for Chinese engineers, Motorola University, in Beijing. Sales in China are now the fastest-growing part of Motorola's business. Pager sales went from 100,000 units in 1991 to more than four million last year.

Motorola's go-slow, have-patience approach to China may also be the lesson for today's China-bound investors. The poor performance—at least initially—of most direct investment in China painfully reveals that a developing economy is as full of pitfalls as it is of promise. Direct investment is a long-term play, and only with distant horizons can investors hope to reach the payoff. Institutional investors who must think short term are stacking the odds against themselves in China. Small investors who look for a quick payoff are doing the same. Stock markets in China and Hong Kong are not cheap. China may well turn out to be the best investment of the decade, but only for investors who give it a decade. F

CHINA'S NEW CONSUMER CLASS

Throughout China's coastal provinces, incomes are shooting up. That means new consumer demand for clothes, cars, and entertainment. But the emergence of wealth is also creating social tensions.

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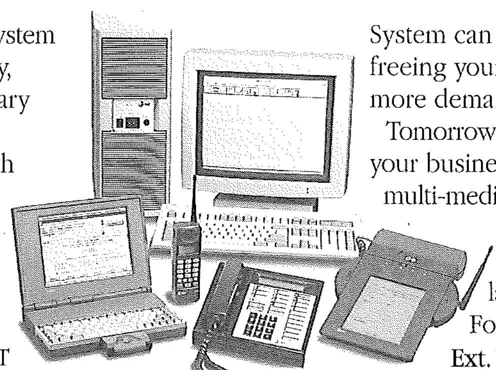

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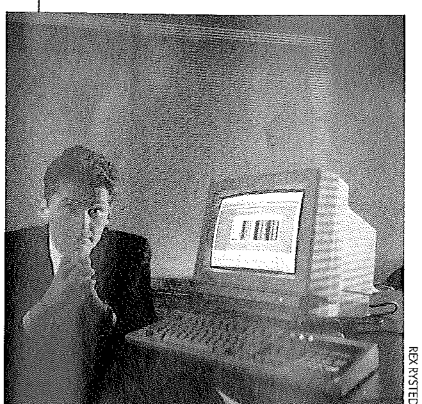
PRODUCTS TO WATCH

By Wilton Woods

BOOKKEEPING IN ENGLISH

Do-it-yourself accountants will welcome In the Black, a Windows accounting system from Microrim of Bellevue, Washington, that combines small-business and personal financial management in one package. Others in the crowded field of bookkeeping programs can perform some of each function, but In the Black was designed to do double-duty, and it's the only system that offers handy translations from accounting jargon into everyday English with the click of a pull-down menu. Did you think the line in the program labeled A/R Record Collections referred to your music inventory? In the Black will tell you that it's where to record customer payments. Features for personal use range from budgeting and credit-card management to net-worth analysis, college savings programs, and retirement planning. For your business, you get all the standard accounting functions, and the ability to turn your information into charts. As you might expect from Microrim, which is known for its R:Base database product, In the Black includes powerful database software. Its contact management system lets users pull up lists organized according to several criteria—a person's last name, company name, date of last contact, next scheduled contact, and more. In the Black has just hit the market at a suggested list price of $89.95.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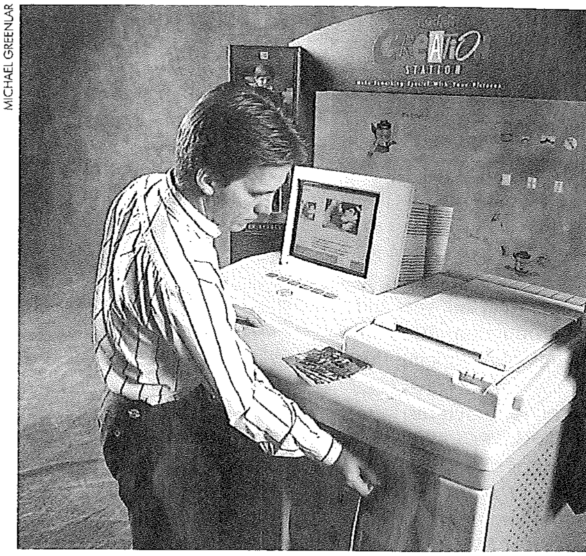

MICHAEL GREENLAR

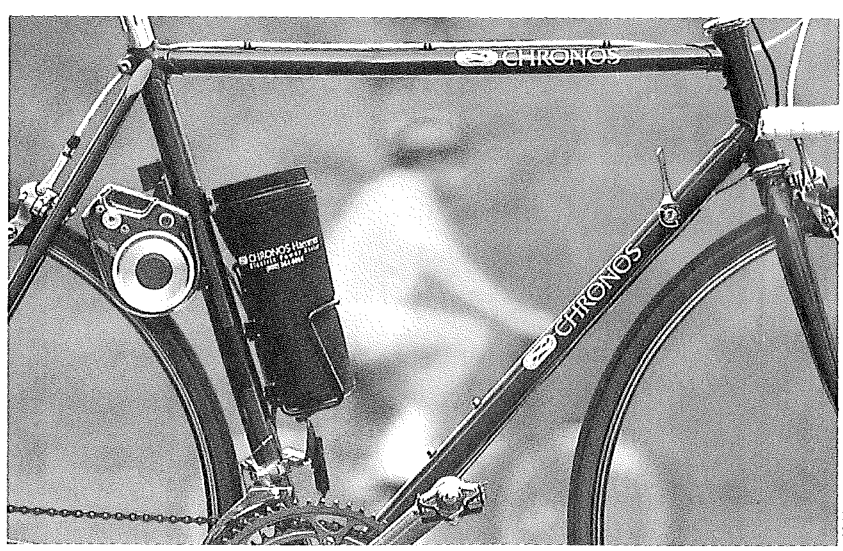
CREATION STATION

You already know that today's do-it-all cameras don't give you the perfect shot every time. Now comes remediation: Eastman Kodak's Creation Station lets you fix the pix after they're developed. It combines a high-end Macintosh with a printer, scanners, and proprietary software. Graphics and prompts help you make enlargements, crop for better composition, and even recenter the photo so grandma is in the middle, where you thought you were aiming the camera. If overexposure makes everything look washed out, the Creation Station can put the bright colors back in. Or if fluorescent lighting turned everyone green, a few twists of the dial can correct the color balance. The machine is versatile enough to copy a new print from an old one, a negative, a slide, or a photo CD. The Creation Station also lets you embellish. Stock images—a map or a seascape background, say—stored in the unit can be combined with your photos. You can call up little balloons to fit above the heads of your subjects, pull out the keyboard, and insert smart-aleck remarks in the spaces. For something sweeter, type in "Happy Birthday, Mother, I love you always," and your name; use the trackball to put the words wherever on the print you want them. You can even add a decorative border.

The machine won't remove the dreaded red-eye from flash shots. But a companion unit for retailers will let trained operators solve this and other problems on the spot. Kodak plans to start rolling Creation Stations out around the end of summer. Pricing the services will be up to retailers, who can be expected to keep them competitive with send-away professional services.

A BOOST FOR CYCLISTS

If bicycling up a long or steep incline makes you feel over the hill, just flick the switch mounted on your handlebar, and the Hammer, from Chronos Research Laboratories of San Diego, will kick in with an extra push to your rear wheel. It gives you the power—but at only 5.7 pounds, not the weight—of two extra cyclists. Unlike heavier auxiliary gasoline motors, the hammer is not a full-time substitute for leg power. You keep on pedaling uphill, but the boost takes away the stress and strain. Lest your downhill glide turn into a schuss, the Hammer automatically disengages when your speed exceeds 12 miles per hour. The battery, which recharges overnight, fits in a water-bottle holder and supplies enough energy for a ride of up to three hours, depending on terrain. Available for $489 from Chronos at 800-364-8894, as well as in some California bike shops. ■



CRAIG MOLENHOUSE

IMPORTING RUSSIAN TECHNOLOGY

We read "Rising in Russia" (January 24), which portrayed many of the risks inherent in doing business in Russia, with perhaps a touch of smugness. Russia is indeed "brimming with technology" and has "vast pools of knowledge." Our oil, gas, and minerals exploration and production company found a way to avoid problems while tapping this technology—we import it.

The Moscow-based Central Research Institute of Geological Prospecting for Base and Precious Metals (TSNIGRI), a bureau of some 2,000 scientists and technicians, long held primary responsibility for finding a continuing supply of precious metals and gems for the U.S.S.R. For four years—before, during, and after the breakup of communism—TSNIGRI has been demonstrating its proprietary exploration technologies in association with our company. So far, TSNIGRI has discovered gold, as well as diamonds and indicator minerals, at 60 locations in a 20-mile swath on our property near Fairbanks, Alaska.

The Russian scientists, mostly Ph.D.s, are amazingly hard-working, honorable, and expert.


ROBERT WALLIS—SABA

"The Russian scientists, mostly Ph.D.s, are amazingly hard-working, honorable, and expert."

Per diem expenses are paid in dollars in the U.S. Their consulting fees? Convertible preferred stock in our company.

F. LYNN BLYSTONE
President and CEO, Tri-Valley Corp.
Bakersfield, California

KEEPING YOUR OPTIONS OPEN

Re "How I Bought My Computer" (January 10): Too bad your boss eliminated Gateway from the list of computers you were allowed to purchase. I have a GW 4DX2-66V. Because of something that happened in shipping, several functions either didn't work at all or failed on the second day. One phone call to Gateway brought forth a techie from Dallas, 75 miles away, to take care of the problem. She brought a new monitor, and checked and rechecked everything. It took her the best part of the day, at *no* charge to me. The moral: Don't exclude lesser-known companies like Gateway. It's not the largest mail-order house for nothing.

MIKE TATERKA
Athens, Texas

You should write another article on how corporations approach computer acquisition and replacement. Based on 25 years' experience in a number of industries, I would hazard a guess that there are many organizations in which nonuser managers restrict access and keep ten-year-old dinosaurs with ten-megabyte hard drives alive with motherboard transplants—sometimes spending over $1,500 in a couple of years on an old unit worth less than $300.

RICHARD W. PHELPS
Managing Editor, Engineering & Mining Journal
Chicago

continued

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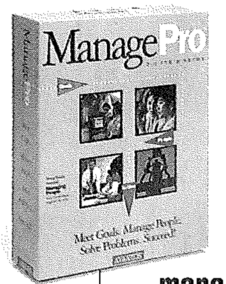

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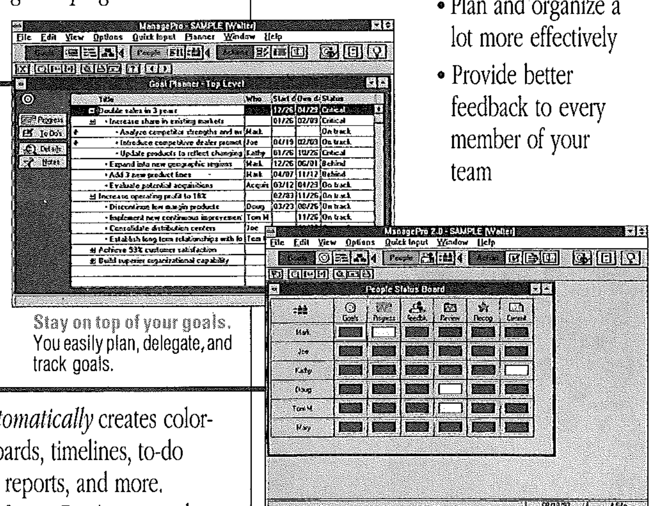

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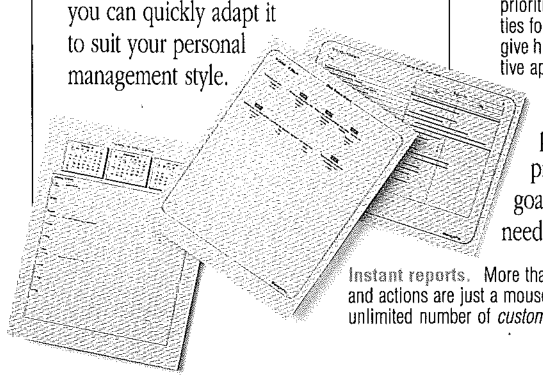

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DOWNSIZING TOWARD OBLIVION

For the umpteenth time, we read in "The Contingency Work Force" (January 24) how using temporary employees makes companies leaner and meaner, and more flexible, cost efficient, and competitive. Hogwash!

There is nothing less competitive than losing customers because your remaining employees are cynical and dispirited and your "contingency work force" has no reason to care about company performance. As long as this stupid strategy enjoys the support of corporate leaders, the American economy will continue to downsize toward oblivion.

RAY KATZ
Management consultant
Philadelphia

You provide a good deal of information about the advantages and disadvantages of the widespread use of a "disposable work force." But you place far more emphasis on short-term operational results than on strategic investment in human resources, and fail to note the extent to which temporary workers tend to be women.

As you point out, precise data are not easy to come by, but we do know that in 1990 fully 27% of women (only 12% of men) worked less than 35 hours a week. We also know that 17.1% of families maintained by employed women live in poverty, vs. 5.6% of all families with employed householders. These statistics are well worth pondering by the 75% of CEOs who are not sure whether the trend for more contingent workers is bad for the country.

PROFESSOR MARIANNE A. FERBER
LYNDA L. MOORE
Acting Director, Radcliffe Public Policy Institute
Radcliffe College
Cambridge, Massachusetts

GETTING A FIX ON STAR TV

"TV Is Exploding All Over Asia" (January 24) captures the state of play in the region. However, you refer to Li Ka-Shing as starting STAR TV in 1990 by "putting up a satellite." In fact, the launch of the satellite was an initiative of AsiaSat, a company in which Hutchison Whampoa, 40% owned by Li, has a one-third interest.

STAR TV was founded by Li's son Richard and leases transponders on AsiaSat, as do a number of other organizations. Also, the original investment was $125 million, not $250 million, as you report.

ARNIE TUCKER
Executive Vice President, Pacific Century Group
Hong Kong

REPORTS OF HIS DEATH . . .

In "Ask Mr. Statistics" (Keeping Up, February 7) Daniel Seligman refers to *Casino Gambling for the Winner* by the "late Lyle Stuart." I assume he means to report that I've departed this earth, but he is mistaken. I haven't departed. I'm right here in Manhattan. Please let your readers know that if they make an appointment with me, I'll be there to keep it. I'm not late.

LYLE STUART
Barricade Books
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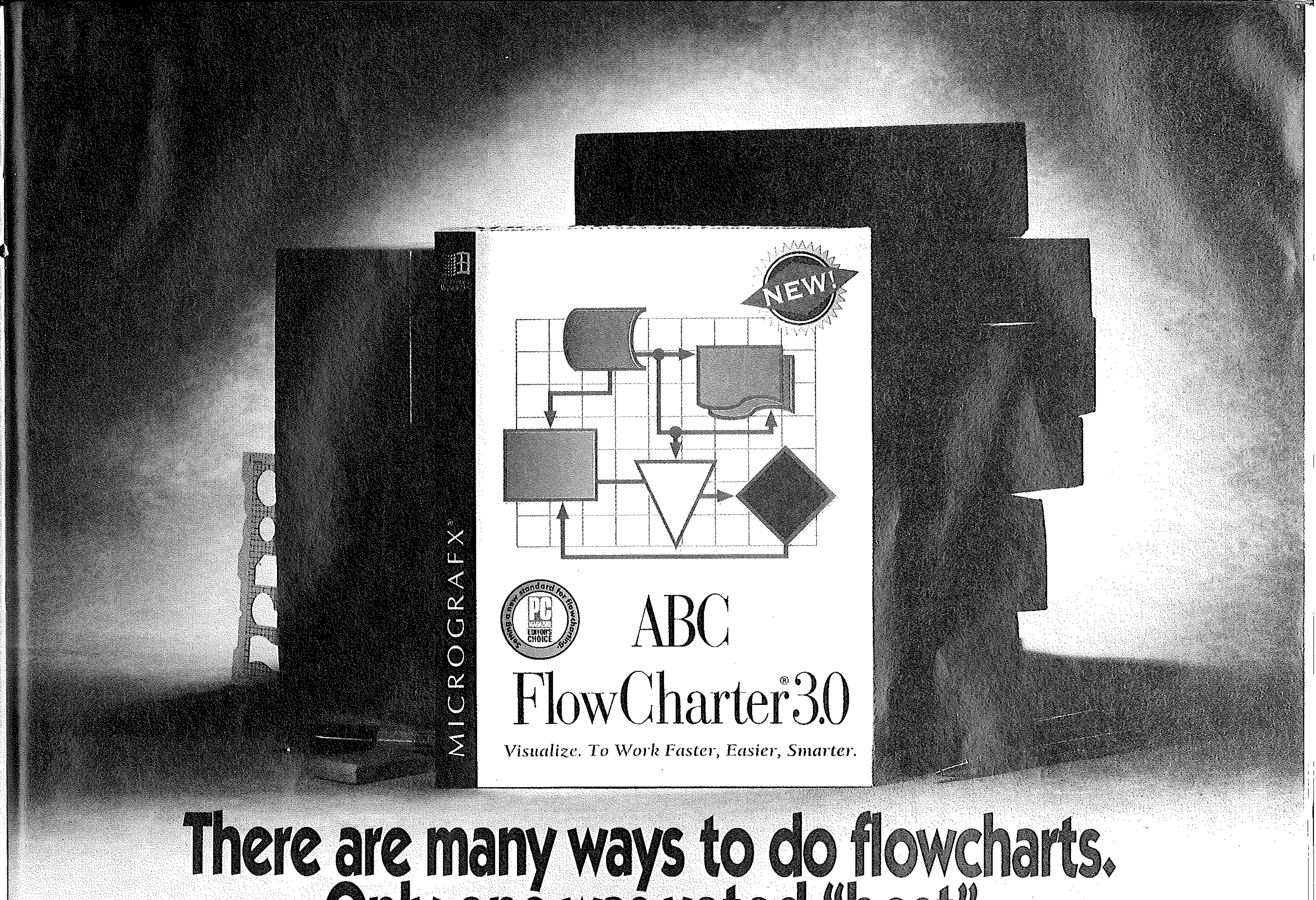

There are many ways to do flowcharts. Only one was voted "best".

PC MAGAZINE EDITORS' CHOICE
December 21, 1993
ABC FlowCharter, Version 2.0

Fast and easy ABC FlowCharter 3.0. The world's #1-selling, #1-rated flowcharting solution.

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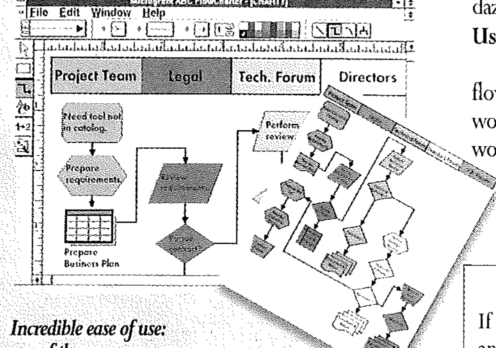

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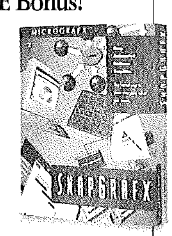

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BY DANIEL SELIGMAN

THE CURSE OF WORK

■ Acting on the principle that fatuities ignored are 8-to-5 to just go away by themselves, we had previously averted our gaze from all articles about "work addiction." Alas, this one is not going away. The alleged scourge has now infiltrated the "Outlook" section of the Sunday Washington *Post*, so the jig is obviously up. Along with heroin, gambling, sex, and sniffing model airplane glue, work is now taken seriously as something people often get addicted to, in which case they need to get cured.

A threshold question about work addiction is whether it isn't just another name for workaholism, a term that has been around since the late Sixties. One senses that the two usages are in fact quite different. During most of its working life, so to speak, workaholism was mostly just a metaphor referring to hard-charging characters who liked their jobs, performed them zestfully and at length, and tended to be admired. The references to work addiction, however, are insistently psychiatric. The phrase is enveloped in psychobabble about inner insecurities, lives destroyed, and—could it be otherwise?—support groups needed. Articles on the subject tend at some point to zero in on an erstwhile go-getter now reduced to mournfully testifying, as real estate entrepreneur Ellen Terry did in the Dallas *Morning News* recently: "I'm a recovering work addict."

The article in the *Post* lengthily quotes Bryan Robinson, professor of child and family development at the University of North Carolina at Charlotte, who states ominously: "Companies don't take work addiction seriously. We're in massive denial. People are dying from it."

Robinson wants human-resources workers trained so that they can spot work addicts and steer them into groups where they can gradually recover their humanity. He also states that a big part of the problem is the prevalence of work addicts at high corporate levels, where they are in a position to demand excessive work from others. This is called "work abuse," a phrase that in one reader's case instantly triggered an image of thousands of senior executives landing in Michael Jackson's current legal position.

How did work addiction make it to the social-problem big leagues? Ploughing through our mound of articles, we posit that one source of support has been the universe of corporate human resourcers, always on the lookout for new workplace woes. The ever-emerging "men's movement" also seems to be supportive. Finally, the specter of widespread work addiction—an article in *Vibrant Life* puts the number of addicts at 12 million—appeals to unionists and others looking for excuses to impose new legal limits on hours worked.

And coming any day now: massive support from Donahue and Oprah.

REPORTER ASSOCIATE *Patty de Llosa*

ASK MR. STATISTICS

■ *Dear Oddsgiver: I am in the seafood distribution business and find myself endlessly wrangling with supermarkets about appropriate order sizes, especially with high-end tidbit products like our matjes herring in superspiced wine, which we let them have for $4.25, and still they take only a half-dozen jars, thereby running the risk of getting sold out early in the week and causing the better class of customers to storm out empty-handed. How do I get them to realize that lowballing on inventories is usually bad business, also to at least try a few jars of our pickled crappie balls?*

—HEADED FOR A BREAKDOWN

Dear Picklehead: The science of statistics has much to offer people puzzled by seafood inventory problems. Your salvation lies in the Poisson distribution, "poisson" being French for fish and, of arguably greater relevance, the surname of a 19th-century French probabilist.

Siméon Poisson's contribution was to develop a method for calculating the likelihood that a specified number of successes will occur given that (a) the probability of success on any one trial is very low but (b) the number of trials is very high. A real-world example often mentioned in the literature concerns the distribution of Prussian cavalry deaths from getting kicked by horses in the period 1875–94.

As you would expect of Teutons, the Prussian military kept meticulous records on horse-kick deaths in each of its army corps, and the data are neatly summarized in a 1963 book called *Lady Luck*, by the late Warren Weaver. There were a total of 196 kicking deaths—these being the, er, "successes." The "trials" were each army corps' observations on the number of kicking deaths sustained in the year. So with 14 army corps and data for 20 years, there were 280 trials. We shall not detain you with the Poisson formula, but it predicts, for example, that there will be 34.1 instances of a corps' having exactly two deaths in a year. In fact, there were 32 such cases. Pretty good, eh? *continued*

ONLY IN AMERICA (Cont'd)

■ *The American Civil Liberties Union [is] suggesting [that] a legislative prayer caucus [in the Georgia House of Representatives] may be violating the constitutional separation of church and state.*

Citing . . . Abraham Lincoln . . . founders of the prayer caucus, Representative Eugene Tillman (D Brunswick) and Representative Ron Crews (R Tucker), took to the well to rail against the . . . ACLU . . .

Teresa Nelson, executive director of the Georgia ACLU, said the organization wrote to Crews and Tillman to question their use of state stationery to invite the Legislature and other state officials to the prayer caucus's weekly Friday morning meeting . . . Nelson said the ACLU was not questioning the group's right to . . . pray but the use of [the] state letterhead to promote the meetings, which she argues is using taxpayer funds for religious activity.

—From a news report
in the Atlanta *Journal and Constitution*.

ILLUSTRATIONS BY MICHAEL WITTE

KEEPING UP

Back to seafood. The Poisson calculation is appropriate to your case, since the likelihood of any one customer's buying your overspiced herring is extremely small, but the number of trials—i.e., customers in the store during a typical week—is very large. Let us say that one customer in 1,000 deigns to buy the herring, and 6,000 customers visit the store in a week. So six jars are sold in an average week.

But the store manager doesn't care about average weeks. What he's worried about is having too much or not enough. He needs to know the probabilities assigned to different sales levels. Our Poisson distribution shows the following morning line: The chance of fewer than three sales—only 6.2%. Of four to six sales: 45.5%. Chance of losing some sales if the store elects to start the week with six jars because that happens to be the average: 39.4%. If the store wants to be 90% sure of not losing sales, it needs to start with nine jars.

There is no known solution to the problem of pickled crappie balls.

GREAT MOMENTS IN HIGHER EDUCATION

■ *Madonna may not seem like she belongs in the same halls as Shakespeare and Plato, but in recent years she has become one of the hottest items in academia.*

In classrooms from Houston to New York and in scholarly papers . . . academics and students are probing the meaning of pop culture's most famous woman . . .

Such interest in Madonna doesn't go over well in all circles . . . The head of an organization of traditional scholars calls it "evidence of . . . decay in the academy" . . .

Such talk infuriates Madonna scholars . . . "Madonna might look like the kind of subject where we are doing Mickey Mouse studies," says Bill Simon, a University of Houston sociologist. "But to ignore such a social symptom . . . would be the height of irresponsibility."

—From an article in the San Diego *Union-Tribune*.

WHO'S "DISADVANTAGED"?

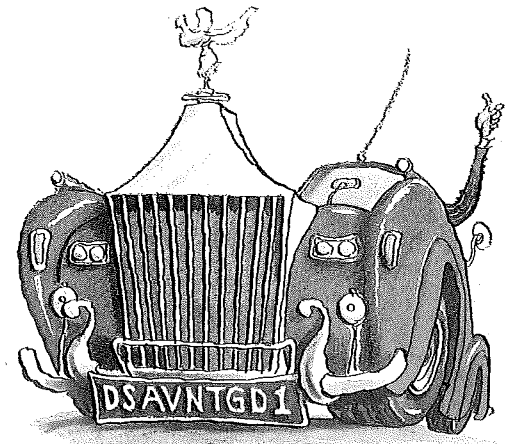
■ Our Nexis search was "SMALL BUSINESS INVESTMENT W/30 SUSAN OR MCDOUGAL," so you know already which corner of the Whitewater scandal we were snooping

around in. And yet one senses that you cannot imagine where the snoopery led—or what, according to the Keeping Up social policy desk, the *real* scandal is.

The search was of course designed to turn up media commentary on the $300,000 Small Business Investment Company (SBIC) loan made in 1986 to Susan McDougal. Susan was then wed to then–big shot James McDougal, who was running the not-yet-infamous Madison Guaranty S&L in Little Rock. Madison Guaranty ultimately went under and cost the American taxpayers something like $60 million, but the McDougals were still riding high in 1986 and were still close to the Clintons. James McDougal was also one of the more important money-raisers in Bill's political life.

Finally, he was the guy who talked the Clintons into joining him and Susan in investing in the Whitewater Development Corp. This was the real estate deal in the Ozarks where all concerned spent several years trying to get rich like everybody else in the not-yet-infamous Eighties.

As expected, the Nexis search turned up a lot of eyebrow elevation in regard to that SBIC loan to Susan. Investment companies putting out such money are supposed to be regulated by the Small Business Administration (which also backs the loans), and the whole selling point of this not-yet-infamous federal program is that it steers capital to "socially and economically disadvantaged" individuals unable to get financing on their own via normal banking arrangements. So quite a few media cluckers found themselves



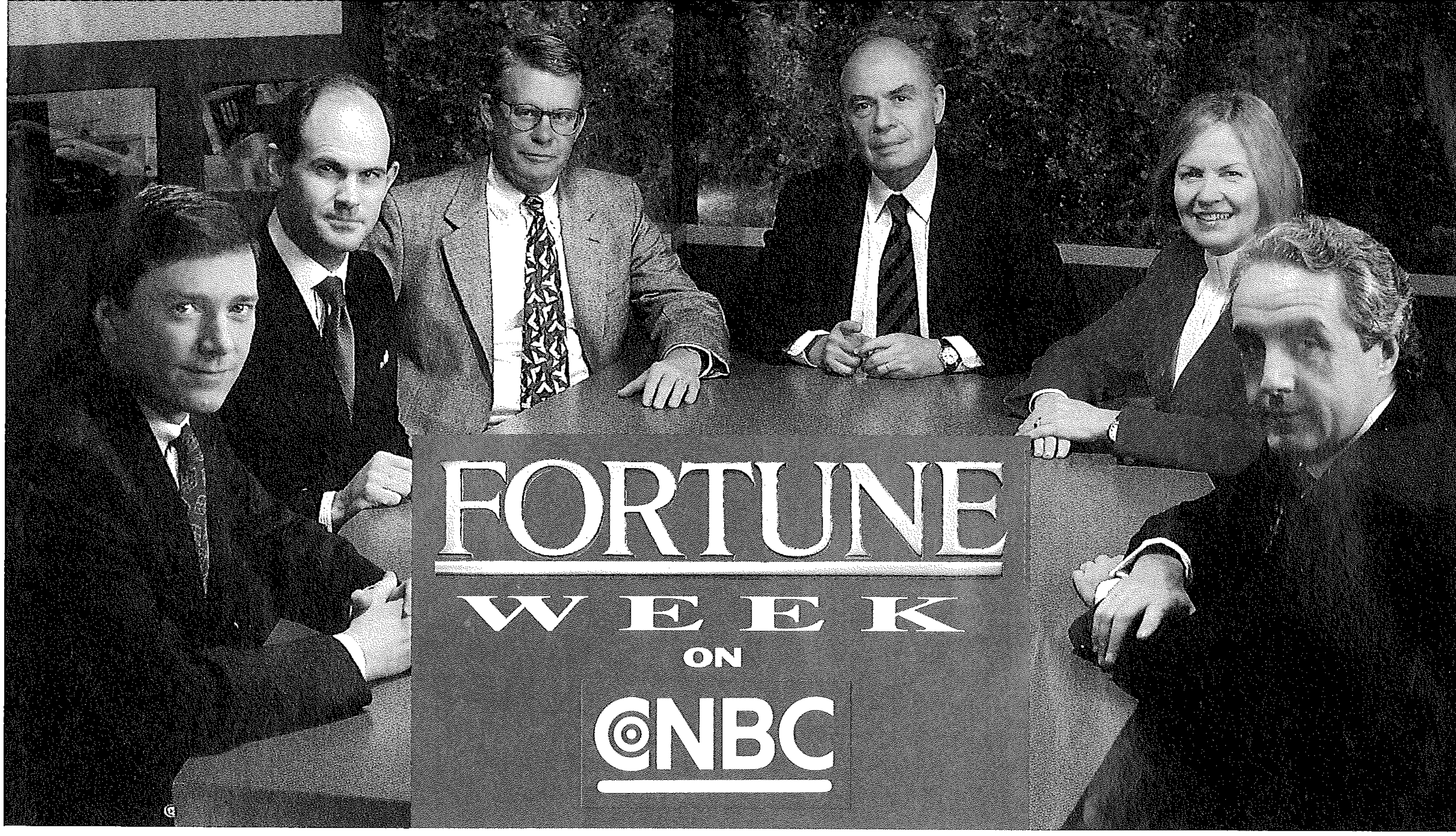
clucking knowingly about the presumably nefarious arrangements that resulted in an obviously well-heeled hotshot like Susan McDougal—or, technically, the real estate marketing firm she ran—getting in on this game to the tune of 300 thou at a time when the McDougals' financial statements showed assets of more than $3 million.

This brings us to the real scandal. No, it is not that Governor Bill may have put pressure on the SBIC to make the loan. (The head of the investment company says his arm was twisted, but Clinton says he has no recollection of any such conversations.) It is also not that much of that $300,000 was used to shore up the governor's investment in Whitewater. Or that Susan ultimately defaulted on the loan, leaving the taxpayers again on the hook. Or that her marketing firm once ran TV commercials featuring Mme. McDougal herself in hot pants, pitching properties.

The real scandal is that the loan to her was entirely legal and not all that exceptional. There is absolutely nothing in the SBIC program regulations barring loans to folks who are rich and well connected. Keeping Up contacted some SBA spokespersons, expecting them to argue that Susan's loan was an oddball case. In fact, they appeared to find nothing startling about such a loan. It turns out that the definition of "disadvantaged" is quite flexible.

The paragraph on "eligibility determinations" notes that those receiving loans may often be minority-group members or women, but that lending officials might also take account of the recipient's low income, unfavorable business location, limited education, physical or other handicap, "inability to compete effectively in the marketplace because of prevailing or past restrictive practices," Vietnam-era military service, or *any other factors that could "contribute to a disadvantaged condition in the ordinary . . . meaning of that word* [italics added, to point up the possibility of qualifying because of bad breath]." In general, state the guidelines, reliance should not be placed on any single factor but instead on the "general pattern of [the loan applicant's] life, opportunities and education."

In other words, you can make a case for almost anybody. Which is why it helps to be well connected—i.e., advantaged. ■



PHOTOGRAPHS BY JOHN ABBOTT

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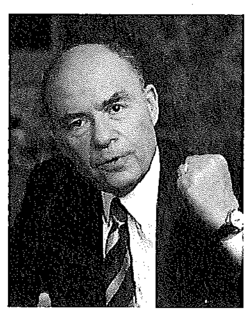
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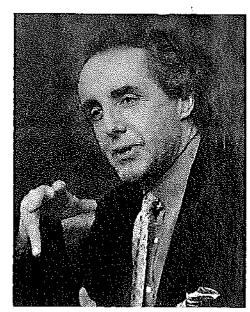
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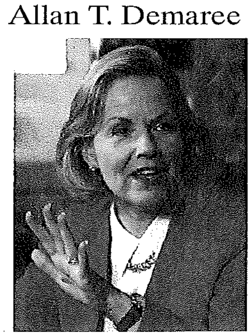
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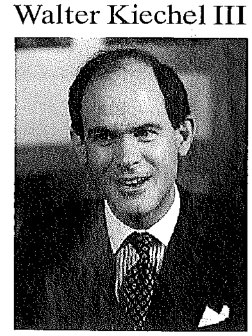
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BY SUSAN CAMINITI

WHEN YOUR BACK IS AGAINST THE WALL

Gert Boyle didn't know anything about running Columbia Sportswear when her husband died. But she took a risk—and prospered.

You may have seen Gert Boyle—she's the tough-looking grandmother in Columbia Sportswear's ads, half-glasses perched on her nose, lecturing her son Tim, Columbia's president, about the rugged workmanship of the company's goods. Over the past 24 years, Boyle, with Tim's help, built Columbia from a tiny Portland, Oregon, maker of hunting and fishing clothes into a company with sales last year of $193 million. Columbia's skiwear, camouflage pants, hunting jackets, and fishing vests are sold by more than 6,000 retailers worldwide.

Yet Boyle didn't have a lick of management experience when she took over in 1970, and a year later she was within a pen stroke of selling out. How she prospered is a study in risk taking and determination.

Boyle's husband, Neal, died of a heart attack at 47. All she knew about the business was what he had discussed over the dining-room table; she was busy raising three children. But she had to try—just three months before, Neal had taken out a loan for the business, using as collateral the family home, a beach house, his life insurance policy, and Gert's mother's house.

The day after the funeral Boyle showed up at Columbia's sewing plant and told 40 scared employees that she was the new boss. "I just said, 'Look, we have to keep running this business,'" remembers Boyle, 69, a heavyset woman who can look sweet one minute and menacing the next. She quickly raised the odds against her by firing the lawyer and accountant because of their attitudes. "They kept telling me, 'Come on, Gert, you're a woman—you don't know how to run this thing.' I didn't need to deal with that."

Of course, she *didn't* know how to run the company. Within a year it was bleeding cash. Some stores had dropped Columbia once they heard Neal had died; the rest weren't getting deliveries on time. Her banker told her he was going to call the loan and cut off her credit. Defeated, she sat down to negotiate with a prospective buyer the bank had lined up. And then something happened that galvanized her.

"I was sitting across the table from this gentleman—and I use the term loosely. After a few minutes I realized that he was just picking and choosing the parts he wanted, which is not what we had agreed to. I would have been left with only $1,400." Suddenly all the fear and sleepless nights Boyle had been suffering in anticipation of this day turned into an overwhelming rage. "I looked at this guy and told him to think about how he would feel if someone was trying to screw his wife over in a business deal while he was six feet under. And I just walked away. It's funny, but from that day on I never doubted we could make a go of this."

She won the banker over by pledging Columbia's $200,000 building. Tim had been helping her part-time while he finished his senior year at the University of Oregon, where he was a journalism major. Now he joined full-time, and the two took a hard look at what the company was manufacturing and what it was merely buying from others and distributing. The wholesaling was absorbing a lot of cash, so Boyle cut it back drastically. She also pruned the items the company made itself to concentrate on those it did best. Tim hit the road, carrying samples to scores of trade shows. Gert stayed behind in Portland because, as she says, "It really doesn't make a good impression to bring your mother along when you're a 22-year-old man trying to strike a deal." That took a lot of faith, she admits, but "if you're going to work closely with somebody, you have to allow yourself to trust them or it's never going to work out."

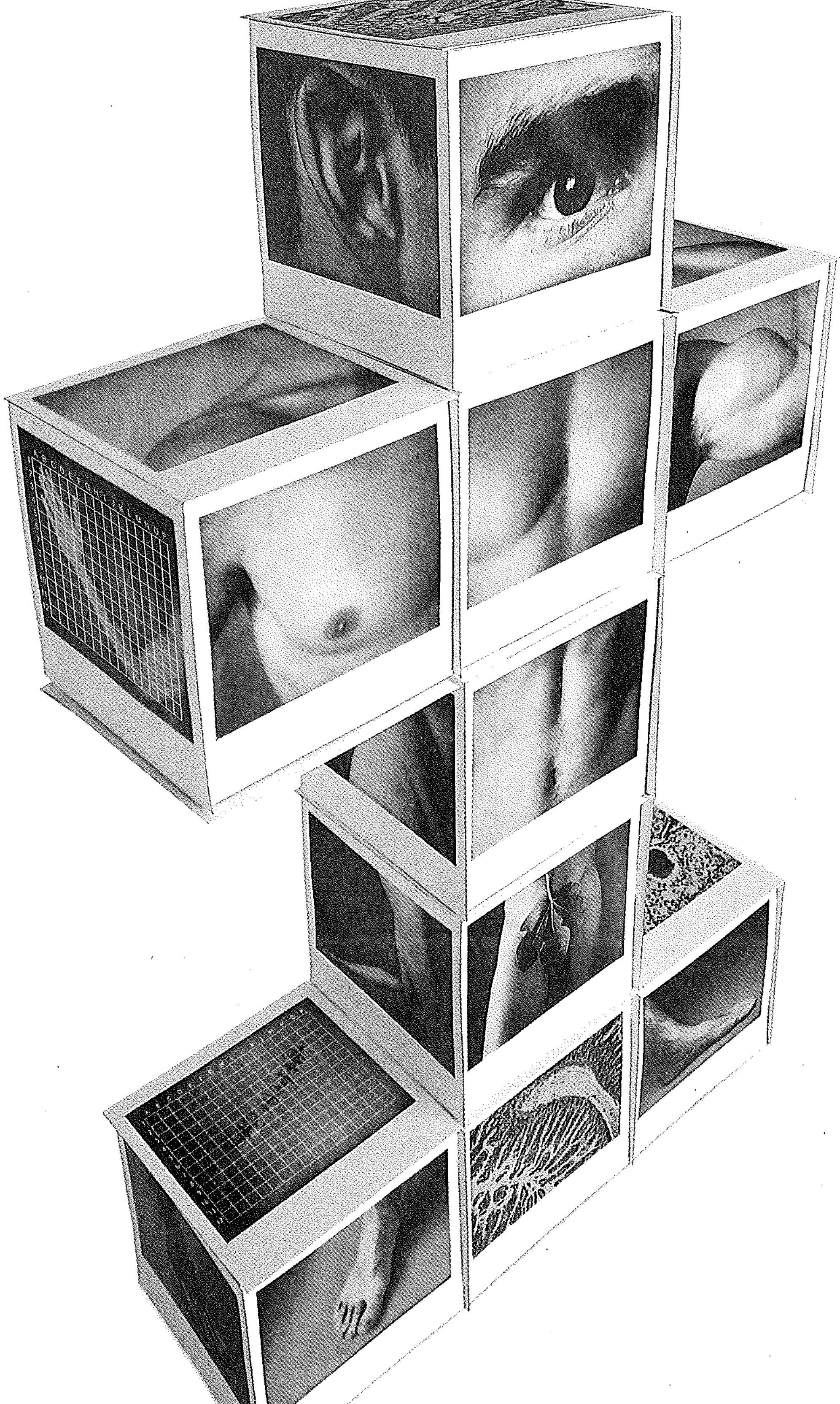
PERHAPS MOST IMPORTANT, she found a mentor. Columbia's banker, who by now had developed confidence in Boyle, put her in touch with another of his clients, Ronald Nelson, an officer of a little, fast-growing company nearby called Nike. He agreed to help the Boyles navigate the shoals. Says Gert: "Ron would say, 'You know, we had the same problem you're having, and here's how we handled it.' His advice really helped us."

It was the Boyles themselves who hit on the idea that launched Columbia into the big time. In 1982 they brought out a unique jacket with a zip-out liner that could be worn by itself. Designed primarily for hunters, it was an instant success. "After a while we thought, 'Hey, if this works for hunters, it could work for other people too.'" Thus was born the Bugaboo. The company has sold some 1.3 million of the $125 jackets, and Columbia is now the market-share leader in ski apparel, according to *Sportstyle* magazine, a trade publication.

Though Tim has taken over as CEO, Gert gets into the office every day when she isn't traveling around the world promoting Columbia. And the Boyles are still taking risks, like using Gert in those ads. "At first I didn't think hunters would understand the point of seeing my mother," says Tim, 44. "But she thought it was a great idea." And if it didn't work? "We'd try something else," says Gert. She has learned, she says, that you will never know if something's going to work unless you try it. F

Boyle, with son Tim: "I said, 'We have to keep running this business.'"

MICHAEL SCHWARZ



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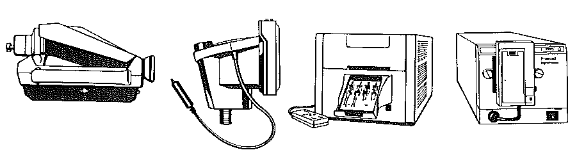

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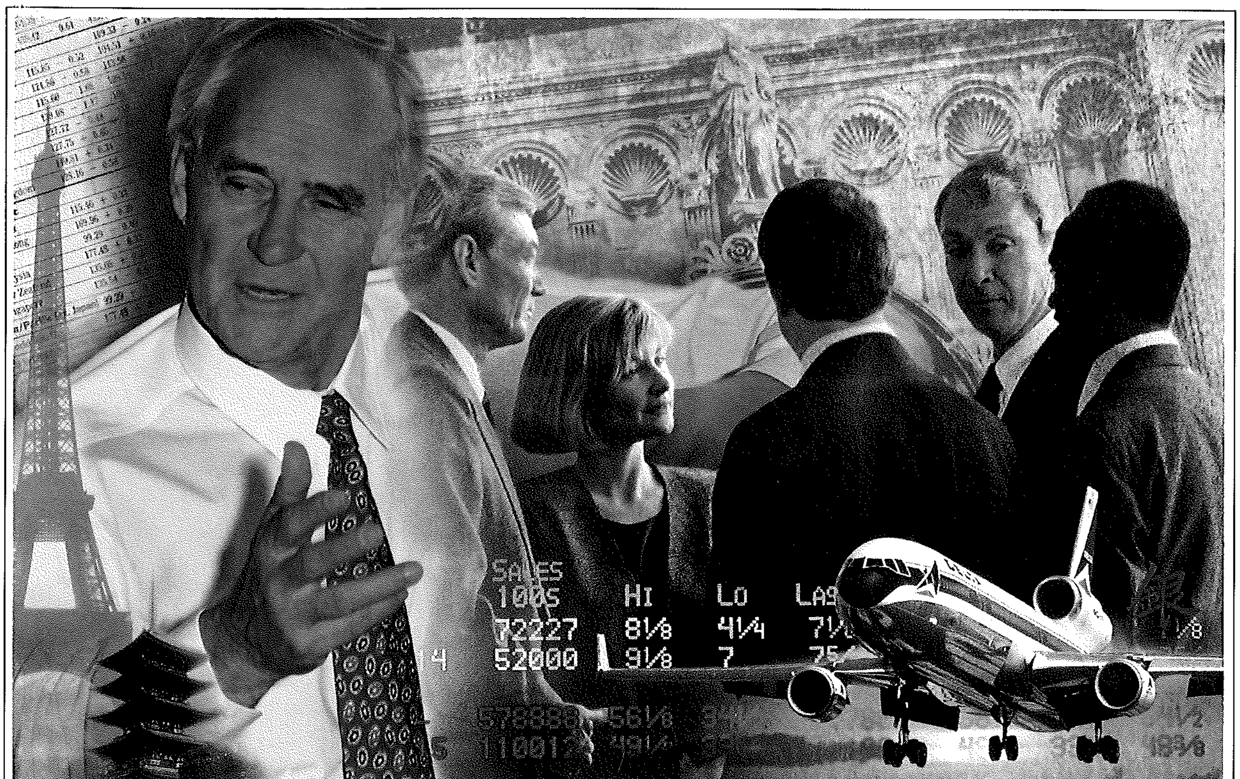

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